Features:

- 4 Main contacts +1 Auxiliary contact
- Auxiliary contact can detect main contact welding in order to construct a safety circuit(IEC 61810-3)
- Meet the requirements for auxiliary contact forcibly Linked with power contact (mirror contact)(IEC 60947-4-1).
- Contact gap:Min 4.0mm (Main contact)
  Min 0.5mm (Auxiliary contact).
- Low coil holding voltage contributes to save energy
- Fulfill 3kA short circuit current test (IEC 62955)
- Weight approximately 150g.

Approvals

UL (File No.) : E179745
TUV (File No.) : R50609061
CQC (File No.) : CQC23002415190

Contact Data

Contact arrangement	4 Form A(Main contact) 1 Form B (Aux-contact)
Contact material	AgSnO2 (Main contact) AgNi (Aux -contact)
Contact Resistance	100mΩ max(@ 6VDC 20A)(Main contact) 100mΩ max(@ 6VDC 1A) (Aux -contact)
Contact Rating (resistive load)	40A 440VAC (Main contact) 1A 277VAC/1A 30VDC (Aux -contact)
Max. Contact Voltage	440VAC (Main contact) 277VAC/30VDC (Aux -contact)
Max. Contact Current	40A(Main contact) , 1A (Aux -contact)
Max. Breaking Capacity	9695VA (Main contact) 277VA/30W (Aux -contact)
Min. recommended contact load	1A,6VDC
Operate Time (at nominal volt.)	≤40ms
Release Time (at nominal volt.)	≤20ms
Electrical endurance	NO: Making 10A, Carrying 40A , Breaking 10A,440VAC,Resistive load, 85℃, 1s on : 9s off,5×10^4ops. NO: 1A 277VAC/30VDC,Resistive load, 85℃, 1s on : 9s off,1×10^5ops.

Note:
The above electrical endurance tests are completed with flux-proof product(with vent hole). The venting hole should be opened in electrical endurance test.

Coil Data

Nominal Voltage VDC	Max. Operate Voltage VDC	Min. Release Voltage VDC	Max. Allowable Voltage VDC	Coil Resistance (1±10%) Ω	Coil Power W	Holding Voltage
9	6.75	0.45	9.9	16.9	4.8	50% to 100% Nomi. Volt. (at 23℃) 55% to 100% Nomi. Volt. (at 85℃)
12	9	0.6	13.2	30		
24	18	1.2	26.4	120		
48	36	2.4	52.8	480		

Note:
(1) Do not apply the maximum voltage on the product continuously for more than 10 min to avoid coil heating
(2) The coil holding voltage is the voltage applied to coil 200ms after the rated voltage

Insulation Data

Insulation resistance	1000MΩ (500VDC)
Initial dielectric strength (@50/60Hz 1min)	
between open main contacts	2000VAC
between main contact and aux-contact	2000VAC
between main contact sets	2000VAC
between aux-contact and coil	2000VAC
between main contact and coil	5000VAC
between disconnected aux-contact	1500VAC

Other Data

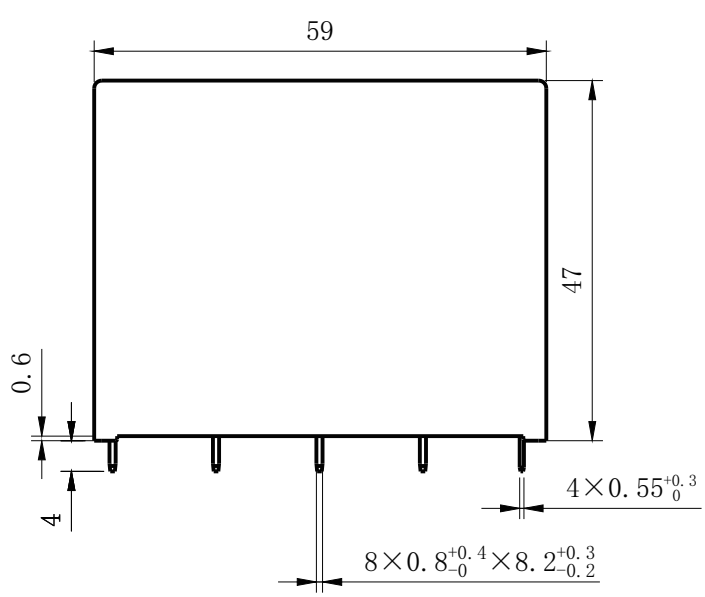
Material compliance	EU RoHS/ELV, China RoHS, REACH
Temperature rise	< 70K(After the coil is energized with rated voltage for 200ms,set the holding voltage to 60% of rated voltage,load current carrying 40A, @85℃)
Shock resistance	Functional 98m/s² Destructive 980m/s²
Vibration resistance	10Hz to 55Hz 1.0mm DA
Mechanical endurance	1×10^5ops
Ambient temperature	-40℃ to +85℃
Humidity	5% to 85%RH
Weight	Approx. 150g
Termination	PCB

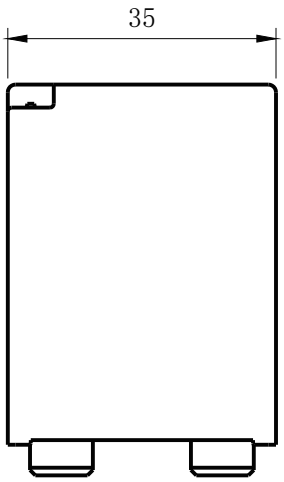
Note:
The above values are initial values

Safety certification load

Certification	File No.	Approved ratings
UL	E179745	NO: Making 10A, Carrying 40A , Breaking 10A,440VAC,85℃ NO: 1A,277VAC/30VDC,85℃
TUV	R50609061	
CQC	CQC23002415190	

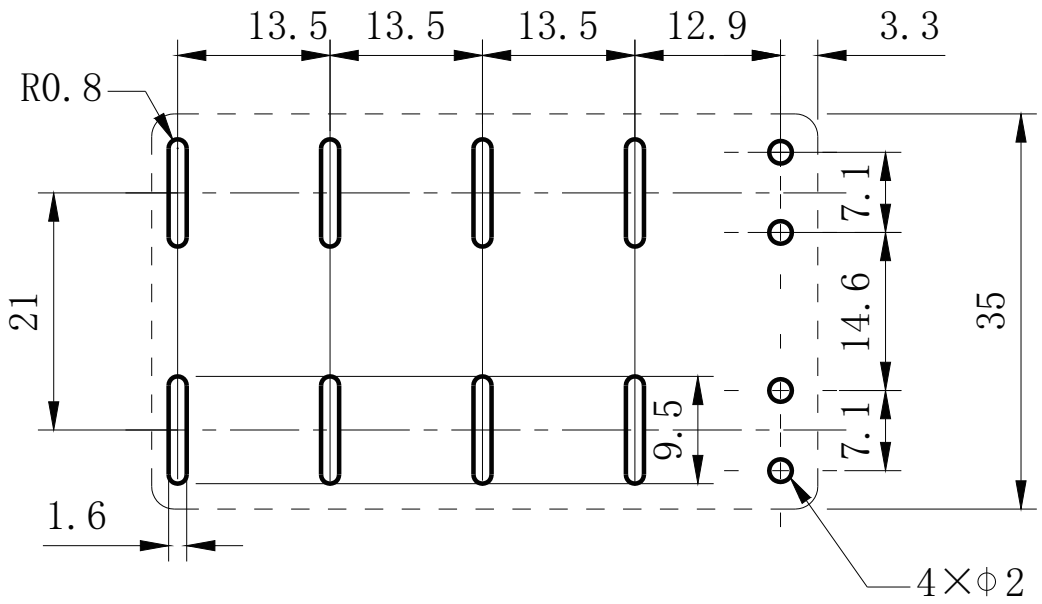
Dimensions



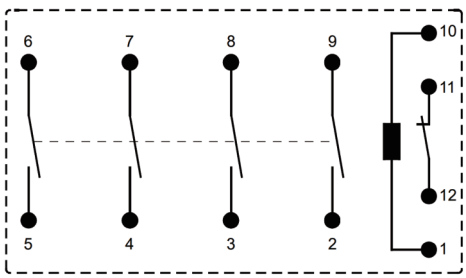


Unless other wises pecified:
If dimension < 1mm, tolerance: ±0.2mm;
If dimension 1~5mm, tolerance: ±0.3mm;
If dimension > 5mm, tolerance: ±0.4mm;

PCB layout (bottom view)



Wiring Diagrams



Product Code Structure

SCP40	-S	-4	12	D	M	F	-XX	

Special parameters: Nil-Standard type, 01-Aux-contacts gold plated

Aux-contact form: Nil-No auxiliary contact, F-Form B

Main contact form:M-Form A

Coil Power:D-4.8W

Coil specification(VDC): 09, 12, 24, 48

Number of main contact groups: 4-4 groups

Protective construction: S- Flux type, SH- Waterproof

Basic model:SCP40

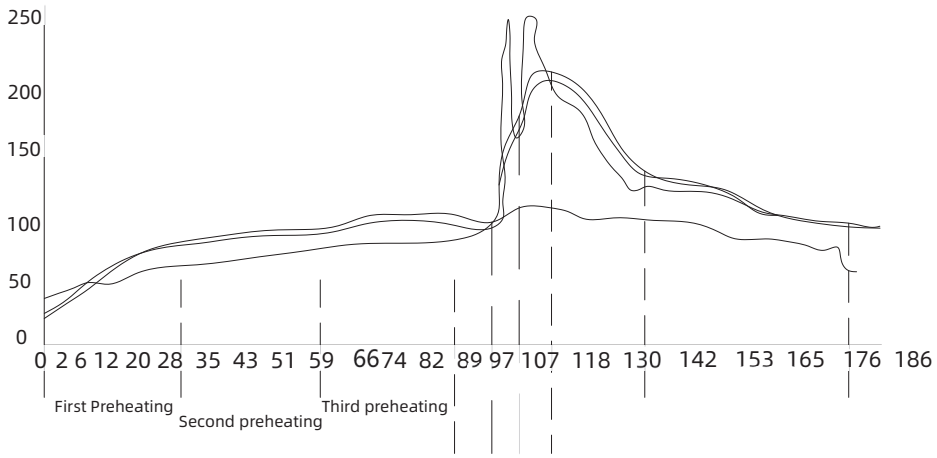
Note:

(1) Flux-proof type can not be used in polluted environment containing H_2S, $S0_2$, $N0_2$, dust and other pollutants.
(2) Water cleaning or surface process is not suggested after the flux-proofed relays are assembled on PCB..
(3) Customer special requirements (XX) shall be evaluated by our company and marked by specail suffix.
(4) Short circuit capability: $Ip^2 \geq 2.6kA$, $I^2t \geq 6.5kA^2s$ (compliant to IEC 62955 9.11.2.3 a)
Test Sequence (E: 9.11.2.3 a) 440VAC, $Ip \geq 2.6kA$, $I^2t \geq 6.5kA^2s$ ($In \leq 32A$, $Inc=10kA$) + 9.11.2.2 440VAC, $Im=500A$.
Test Sequence (F: 9.11.2.3 b) 440VAC, $Im=500A$ (9.11.2.3 c) 440VAC, $Ip \geq 2.6kA$, $I^2t \geq 6.5\ kA^2s$ ($In \leq 32A$, $I\Delta c=10kA$)

Welding conditions (recommended)

(1) Wave soldering installation conditions

In the case of automatic welding, refers to the following conditions. Pre-heating: within 150℃ (welding surface terminal) within 150 seconds.



Wave soldering temperature profile

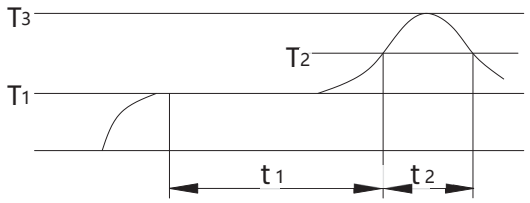
Welding conditions (continuous)

Recommended welding temperature and time: 240℃~260℃, 3s-5s. In addition, the impact on the relay may vary according to the type of substrate actually used.Therefore, check the actual substrate for confirmation.

(2)Reflow welding installation conditions (PIN-in-paste process)

Under the condition of mixed parts on the same substrate, the temperature rise of the relay largely depends on the heating method of reflow welding machine, so please set the temperature condition.

Make the temperature of the relay terminal welding part and the surface of the relay shell less than the above conditions, and then confirm with the actual machine in advance.



T_1 = 150℃~180℃
T_2 ≥ 230℃
T_3 ≥ 250℃
t_1 = 60S~120S
t_2 ≤ 30S

Disclaimer

This product specification is for reference only, subject to change without prior notice.It is not possible for Sanyou to evaluate all the performance parameter requirements of relays in each specific application field, so customers should choose the suitable product according to the specific application conditions. If you have any questions, please contact us for more technical support, but the customer should be responsible for product selection.