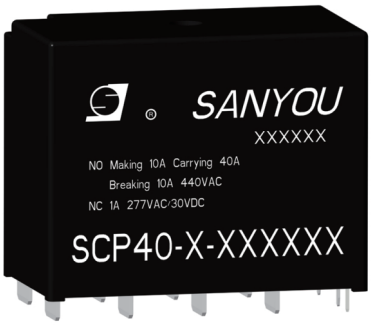
三友继电器
® SANYOU RELAYS
Relays for advanced technology

AC Charging Pile Relay SCP40



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),each 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

Contact Data

Contact arrangement	4 Form A(Main contact) ,1Form B(Aux-contact)
Rated load (Resistive)	Main contact：40A 440VAC Auxiliary contact：1A 277VAC/1A 30VDC
Max. Switching current	Main contact：40A Auxiliary contact：1A
Max. Switching voltage	Main contact：440VAC Auxiliary contact：30VDC，277VAC
Max. Switching power	Main contact： 17600VA Auxiliary contact：277VA/30W
Electrical endurance	NO: Making 10A, Carrying 40A ,Breaking 10A,440VAC, Resistive load, 85℃, 1s on 9s off,5×10^4ops. NC:1A 277VAC/30VDC, Resistive load, 85℃, 1s on 9s off,10×10^4ops.

Parameters Data

Contact material	Main contact:AgSnO2 Auxiliary contact:AgNi	
Contact resistantce	Main contact:10mΩ max(@ 6VDC 20A) Auxiliary contact:100mΩ max(@ 6VDC 1A) Auxiliary contact gold plated:10mΩ max(@ 6VDC 1A)	
Operate time (at nomi.volt.)	40ms.Max.	
Release time (at nomi.volt.)	20ms.Max.	
Insulation resistance	1000MΩ (500VDC)	
Dielectric strength	Between open main contacts	2000VAC， 50/60Hz 1min.
	Between main contact and auxiliary contact	
	Between main contact sets	
	Between auxiliary contact and coil	
	Between main contact and coil	5000VAC， 50/60Hz 1min.
	Between disconnected auxiliary contact	1000VAC， 50/60Hz 1min.
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/s^2	
	Destructive 980m/s^2	
Vibration resistance	10Hz to 55Hz 1.0mm DA	
Mechanical endurance	1×10^5ops	
Ambient temperature	-40℃ to +85℃	
Humidity	5% to 85%RH	
Termination	PCB	
Weight	Approx. 150g	

Notes:(1) The data shown above are initial values.

Coil Data

Nominal Voltage VDC	Max. Operate Voltage VDC	Min. Release Voltage VDC	Max. Allowable Voltage VDC	Coil Resistance Ω	Coil Power	Holding Voltage
9	6.75	0.45	9.9	16.9×(1±10%)	4.8W	35% to 80% Nomi. Volt. (at 23℃) 40% to 60%Nomi. Volt. (at 85℃)
12	9	0.6	13.2	30×(1±10%)		
24	18	1.2	26.4	120×(1±10%)		
48	36	2.4	52.8	480×(1±10%)		

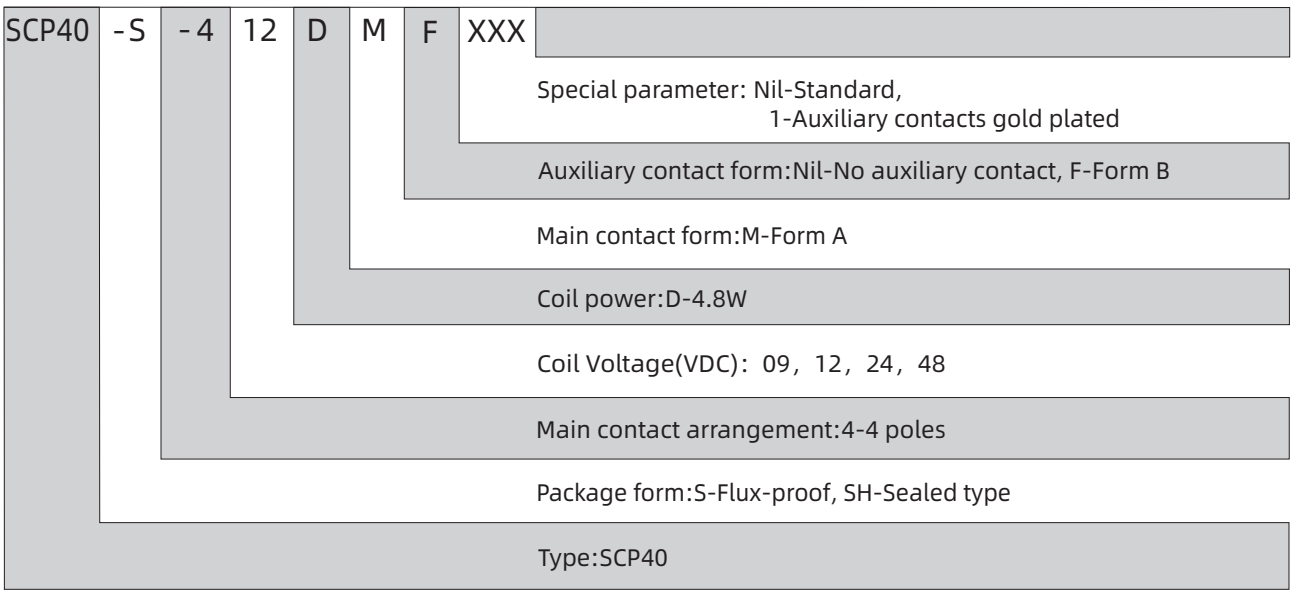
Note:(1)To avoid overheating and burning,the coil can not be consistently applied to with voltage larger than maximum holding voltage.
(2)The coil holding voltage is the voltage applied to coil 200ms after the rated voltage.

Safety approval ratings

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

Note:(1) All values unspecified are at room temperature.
(2) Only some typical rating are listed above.If more details are required,please contact us.

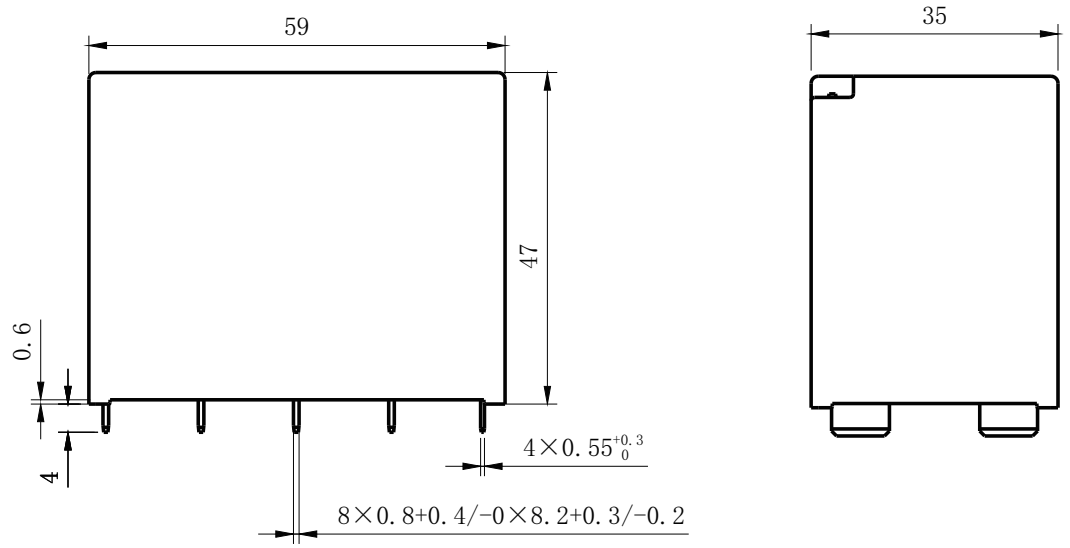
Ordering Information



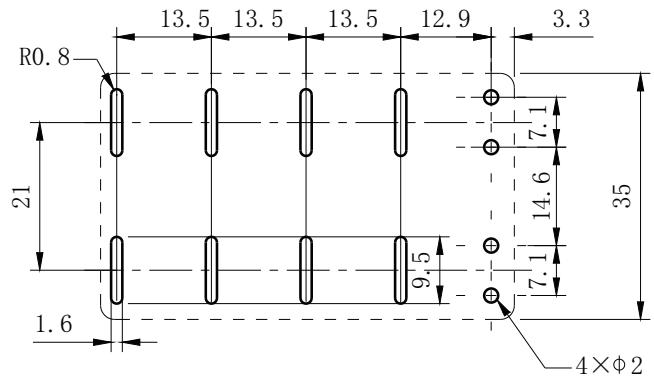
Notes:
(1)Flux-proofed relays can not be used in the environment with pollutants like H2S, SO2, NO2, dust, etc.
(2)Water clearing or surface process is not suggested after the flux-proofed relays are assembled on PCB.
(3)Customer special requirements need to be worked out with Sanyou
(4)Short circuit 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≥2.6kA, $I^2t \geq 6.5kA^2s$ (In≤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≥2.6kA, $I^2t \geq 6.5\ kA^2s$(In≤32A, IΔc=10kA)

Outline Dimensions, wiring diagram, PCB layout (unit:mm)

Outline Dimnsions

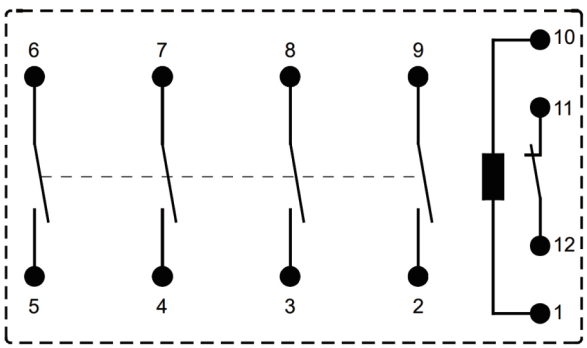


PCB layout



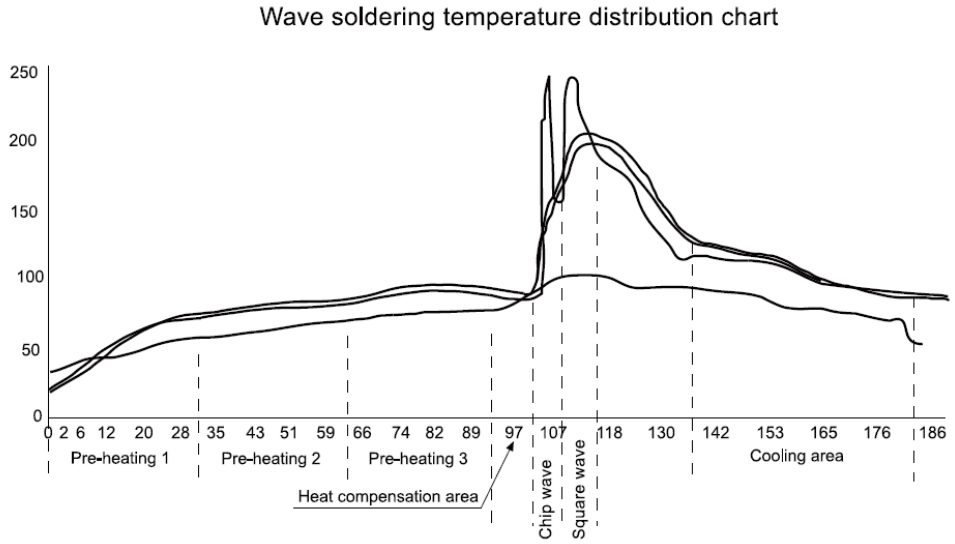
Unlessotherwisespecified
If dimension < 1mm, tolerance: ±0.2mm;
If dimension 1~5mm, tolerance: ±0.3mm;
If dimension > 5mm, tolerance: ±0.4mm;

Wiring Diagram(Bottom view)



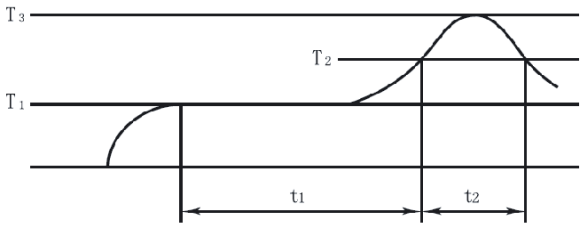
Soldering

Wave soldering conditions



Please obey the following conditions when soldering automatically.

Pre-heating: within 150 °C(solder surface terminal portion)and within 150 seconds.



T1=150℃~180℃
T2≥230℃
T3≤250℃
T1=60S~120S
T2≤30S

The recommended soldering temperature range and duration is 240℃ to 260℃, 3s to 5s; Furthermore, because the type of PC board used and other factors may influence the relays, test that the relays function properly on the actual PC board on which they are mounted.

Reflow soldering conditions（Pin-in- Paste process）

Rise in relay temperature depends greatly on the component mix on a given PC board and the heating method of the reflow equipment. Therefore, please test beforehand using actual equipment to ensure that the temperature where the relay terminals are soldered and the temperature at the top of the relay case are within the conditions given above.

Statement:

This product specification is for reference only, subject to change without prior notice.We could not evaluate all test conditions for every possible application, thus customers should be in a right position to choose suitable products for their own application. If in doubt, please contact Sanyou for more technical support. However,it's the customer's responsibility to determine which product should be used.

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