

Features:

- It has two groups of normally open and two groups of conversion contacts.
- 16A switching capability.
- Special type of 10000V surge voltage (1.2/50 μ S) between coil and contact available.
- Small size, only 15.85mm high.
- Creepage distance and air gap between coil and contact ≥ 10 mm.
- Dielectric withstand voltage between coil and contact is 5kV.
- UL insulation class F, which can provide products meeting IEC60335-1.
- Overall dimension: 29mm $\times$ 19.6mm $\times$ 15.85mm

Typical applications:

- Household Electric Appliances.
- Washing machine
- air conditioner
- Microwave Oven
- Industrial controller
- Intelligent switch

Approvals

UL, c-UL (File No.): E190598
CQC (File No.): CQC24002456755
TUV (File No.): R50673689

Contact Data

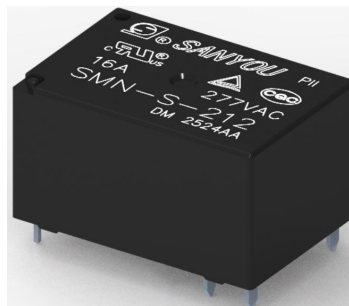
Contact arrangement	2 Form A(2NO) or 2 Form C(2CO)
Rated voltage	277VAC
Max.switching voltage	277VAC
Rated current	16A
Min. recommended contact load	1A, 6VDC
Breaking capacity max.	4432VA
Contact material	AgNi- AgSnO ₂
Frequency of operation	360 ops./h
Operate/release time max.	10ms/10ms
Electrical endurance	See electrical endurance graph

Contact ratings

Type	Contact	Load	Cycles
UL 60947-4-1			
SMN	A/C(NO)	16A, 277VAC, cos ϕ =1, 85°C	5X10 ⁴
SMN	A/C(NO)	1HP, 277VAC, 85°C	5X10 ⁴
SMN	A/C(NO)	TV-8, 250VAC, 85°C	2.5X10 ⁴
GB/T 21711.1-2023			
SMN	A/C(NO)	16A, 277VAC, 85°C	2X10 ⁴
IEC 61810 EN 60730-1			
SMN	A/C(NO)	16A, 277VAC, 85°C	5X10 ⁴
Mechanical endurance			$\geq 1 \times 10^6$

Coil Data

Coil voltage range:	5 to 48VDC
Operative range, IEC 61810	2
Coil insulation system according UL	Class F



Coil Data(continued)

Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω ($\pm 10\%$)	Rated coil powers mW
5	≤ 3.5	≥ 0.5	31	800
6	≤ 4.2	≥ 0.6	45	800
9	≤ 6.3	≥ 0.9	101	800
12	≤ 8.4	≥ 1.2	180	800
24	≤ 16.8	≥ 2.4	720	800
48	≤ 33.6	≥ 4.8	2880	800

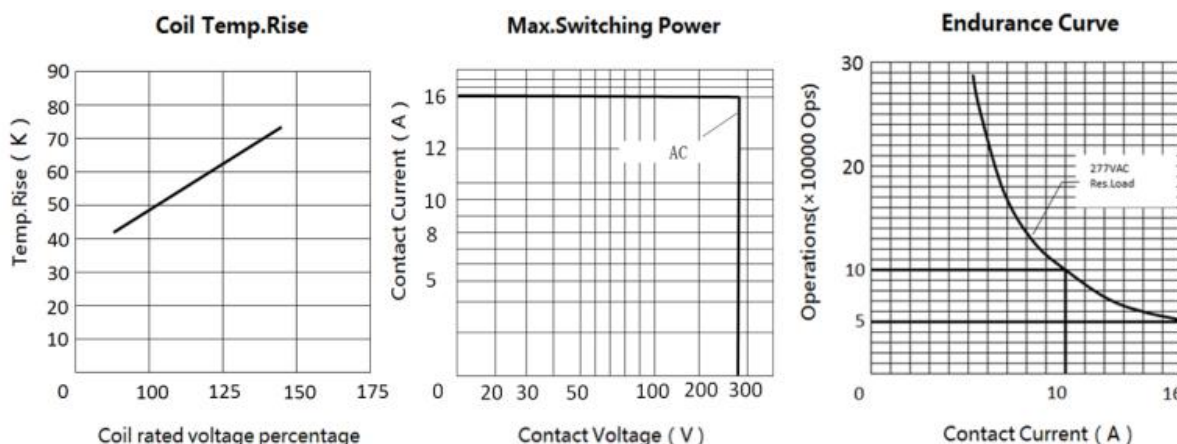
All figures are given for coil without pre-energization, at ambient temperature 20°C

Insulation Data

Initial dielectric strength	
between open contacts	1000VAC
between contact and coil	5000VAC
Clearance/Creepage	
between contact and coil (Clearance)	≥ 10.0 mm(actual)
between contact and coil (Creepage)	≥ 10.0 mm(actual)
Material group of insulation parts	IIIa
Tracking index of relay	PTI 175V/PTI 250V

Other Data

Material compliance:	EU RoHS/ELV, China RoHS, REACH
Ambient temperature	-40°C to +85°C
Category of environmental protection	
IEC 61810	RTII - flux proof RTIII - Sealed type washable
Weight	Approx. 15.9g
Resistance to soldering heat THT (IEC 60068-2-20)	260°C/5s
Packaging/unit	tray

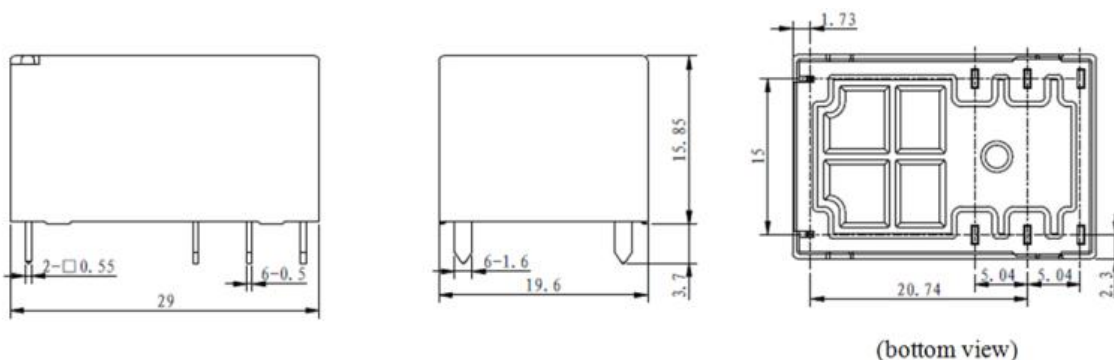


note:

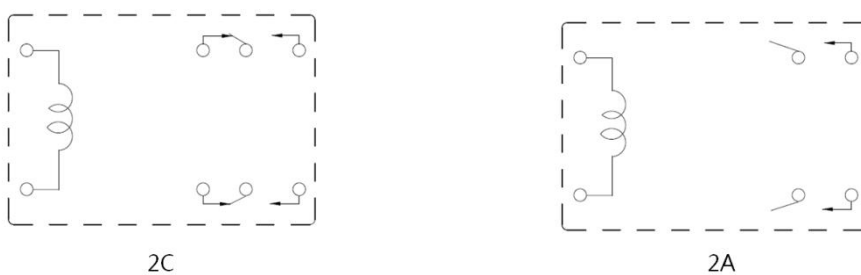
(1) Test conditions: room temperature, flux-proof product, resistive load, 1s on, 9s off.

(2) The above curves are for reference only, and the final result is subject to the experiment.

Dimensions

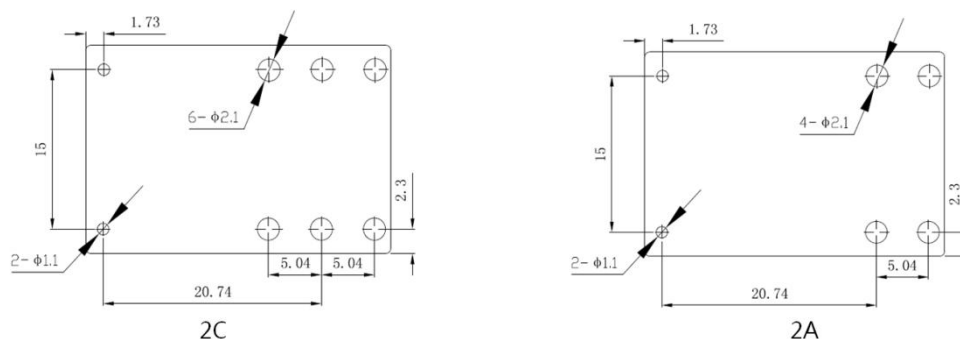


Wiring Diagrams



Wiring Diagram(Bottom view)

PCB Layouts (bottom view)



P.C.B.Layout(Bottom view)

In case of no tolerance shown on outline dimension
 If dimension < 1 mm, tolerance: ± 0.2 mm
 If dimension 1~5mm, tolerance: ± 0.3 mm
 If dimension > 5mm, tolerance: ± 0.4 mm

Notes:

- 1.The dimension of pin is the size before tinning
- 2.Tolerance of PCB layout: ± 0.1 mm.

Product Code Structure

SMN	-S	-2	12	D	M	1	-F	-XX	
									Special Parameter: Letter or number - Special requirement
									Insulation System : Nil – Class F F - Class F
									Contact Material : Nil - AgSnO ₂ 1 – AgNi & AgSnO ₂
									Contact Arrangement: Nil - Form C M - Form A
									Coil Power : D - 0.8W
									Rated Coil Voltage(VDC): 05, 06, 09, 12, 24, 48
									Number of Poles: 2 – 2Pole
									Protective Construction S - Flux-proof SS - Sealed type unwashable SH - Sealed type washable
									Type: SMN

- (1) Flux-proof relays can not be used in the environment with pollutants like H₂S, SO₂, NO₂, dust, etc.
- (2) Water cleaning or surface process is not suggested after the flux-proof relays are assembled on PCB.
- (3) Special requirements of customers (XX) shall be evaluated by our company and marked by characteristic symbols
- (4) C1 suffix stands for product in accordance to IEC60335-1(GWT) & CTI250V.

Examples of Ordering Codes

SMN-S-212DM relay SMN , Flux-proof , rated DC voltage 12V ,coil power 0.8W ,2NO,and contact material AgSnO₂.
SMN-S-212D relay SMN , Flux-proof , rated DC voltage 12V ,coil power 0.8W ,2CO,and contact material AgSnO₂.

Disclaimer

The specification is for reference only. Specifications are subject to change without prior notice.

We could not evaluate all the performance and all the parameters for every possible applications. Thus the users should in a right position to choose suitable product for their own application. For sealed relays, after installation and cleaning, please open the ventilation hole in the case before use. If there is any query, please contact Sanyou for technical services. However it is the user's responsibility to determine which product should be used.