SANYOU RELAYS
Relays for advanced technology

Miniature High Power Relay

SM-P-Series

Features

16A high swithing capacity
Small size and 15.7mm high
10mm spacing,5KV dielectric between coil and contact
Withstand surge voltage of 10KV
Compliance with IEC60335-1 GWIF850℃/GWIT775℃ CTI>=250 V
Ambient temperature up to:-40℃~+105℃

Safety Approval

UL，C–UL File No.：E190598

VDE File No.： 40031353

Contact Capacity

Model	SM - P
Nominal switching capacity (res. load)	16A 250VAC
Max. switching current	20A
Max. switching voltage	277VAC
Max. switching power	5,440VA

Characteristic Data

Contact material	Silver alloy	
Initial contact resistance	100mΩ Max.	
Operate time (at nominal volt.)	15msec. Max.	
Release time (at nominal volt.)	10msec. Max.	
Initial insulation resistance	100MΩ Min.(DC500V)	
Initial dielectric strength	Between open contacts： AC1,000V，50/60Hz 1Min. Between coil and contact: AC5,000V，50/60Hz 1Min.	
	Between contact sets： AC2,500V，50/60Hz 1Min.	
Vibration resistance	Functional	10～55Hz at double amplitude of 1.5 mm
	Destructive	10～55Hz at double amplitude of 1.5 mm
Shock resistance	Functional	10G Min.
	Destructive	100G Min.
Endurance (operations)	Mechanical (at10,800 ops./h)	10,000,000
	Electrical (at 360 ps./h)	100,000
Ambient temperature	-40℃~+105℃(no condensation)	
Unit weight	Approx. 13.5 g	

Coil Data(at 20℃)

Norminal Voltage (VDC)	Norminal operating current ±10%(mA)	Coil resistance ±10%(Ω)	Max. allowable voltage	Pick-up voltage (Max.)	Drop-out voltage (Min.)	Nominal operating power
5	81.00	63	150 % of nominal voltage	70 % of nominal voltage	10 % of nominal voltage	Approx. 0.4W
6	67.00	90				
9	45.00	203				
12	33.00	360				
15	26.00	562				
18	22.00	810				
24	17.00	1440				
48	8.00	5760				
60	6.70	8570				
110	3.60	28800				

Safety Approval Ratings

Approval	VDE	UL
File No.	40031353	E190598

Ordering Information

Nomenclature

SM - S - 1 12 D M P 1 - F - XX

Special Parameter：Nil–Standard type, Letter or number–Special requirement

Insulation System：Nil–Standard, B–Class B, F–Class F

Contact Material：Nil-AgNi, 1-AgSnO2, 2-AgSnO2 and AgNi

P-SM1P,16A 105℃ at 5.0mm pinning

Contact Form：Nil–Form C, M–Form A , Form B

Coil Power：D–0.4W

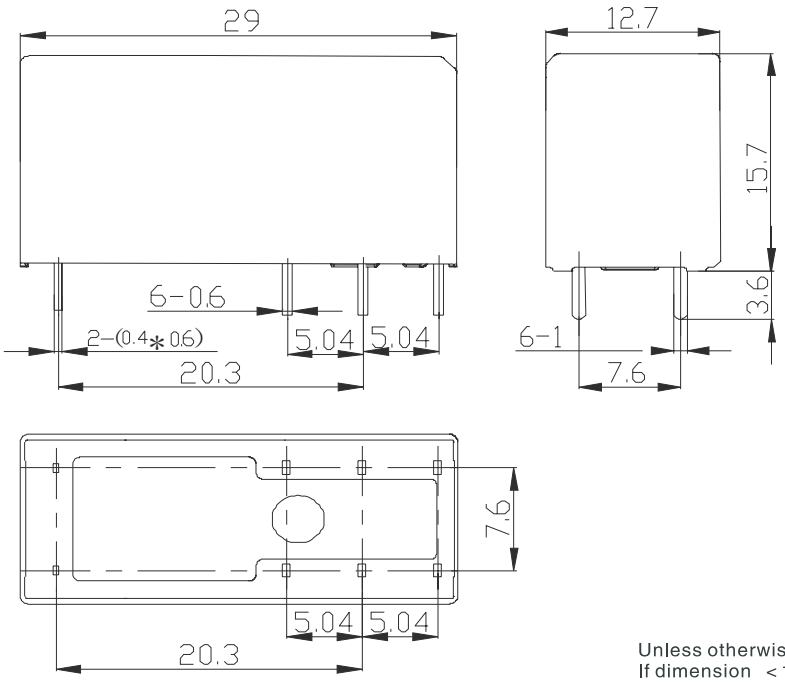
Coil Voltage(VDC): 05,06,09,12,15,18,24,48,60,110

Number of Poles：1–1 Pole,

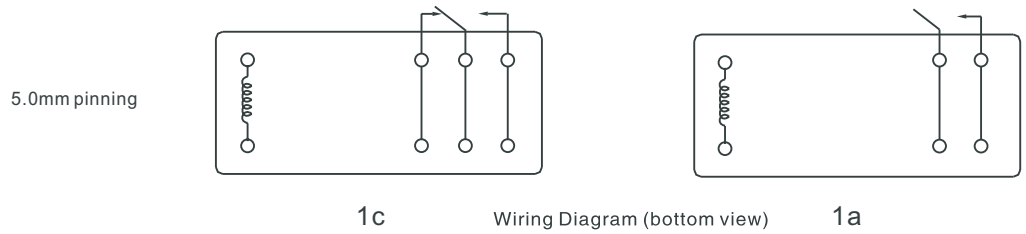
Protective Construction：S–Flux proofed SH–Sealed type washable

Type Designation：SM

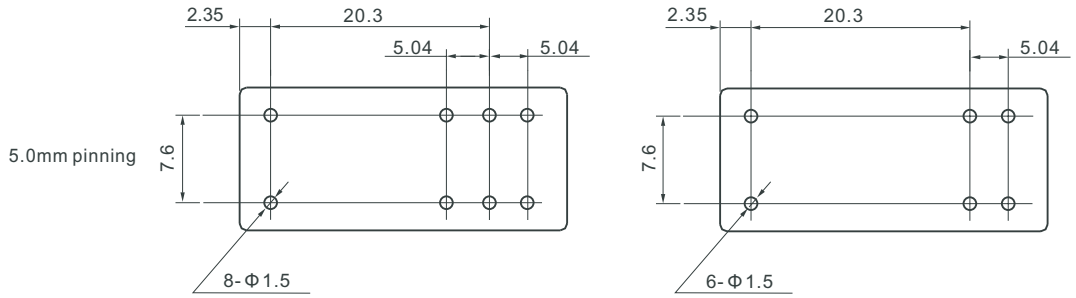
Outline Dimensions,Wiring Diagram,P.C.Board Layout(unit:mm)



Unless otherwise specified:
If dimension ＜1mm, tolerance: ±0.2mm;
If dimension 1~5mm, tolerance: ±0.3mm;
If dimension ＞5mm, tolerance: ±0.4mm.
Note: 1. Extended terminal dimension is dimension before soldering.
2. Tolerance of P.C.B. layout: ±0.1mm.



1c Wiring Diagram (bottom view) 1a



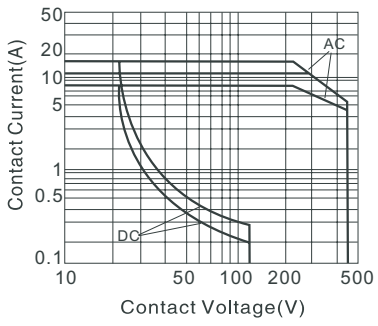
1c P.C.B. Layout (bottom view) 1a

Typical Applications

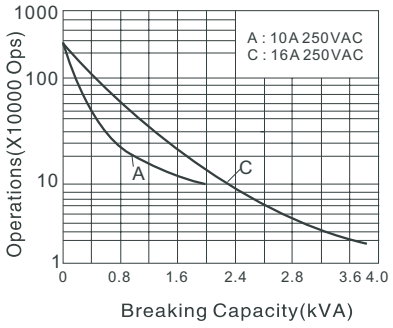
● Home appliances, washing machine, air conditioner, microwave oven, audio equipment, monitor, industrial control equipment, instrument, etc.

Characteristic Curves

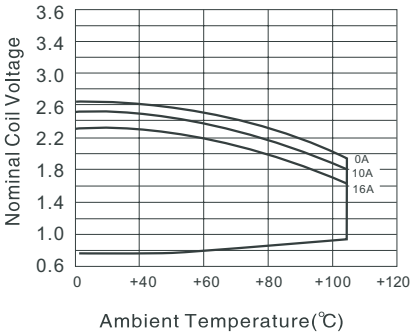
Maximum Switching Power



Endurance Curve



Coil Operating Range



Disclaimer:

This datasheet is the customers' reference. All the specification are subject to change without notice.

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