

S20 RELAY

SHORI

◆ Features

- High rating miniature PCB Relay.
- AC & DC coil are both available.
- Low height 15.7mm and Class F insulation system.
- 20A 277VAC/SPDT, 10A 277VAC/DPDT rating are approved.



◆ Coil Data [at 23°C]

- Standard Type

Rated voltage (V)	Coil Resistance ±10% (Ω)	Rated Current ±10% (mA)	Pick up Voltage (Max)	Drop out Voltage (Min)	Max continuous Voltage	Power consumption At rated Voltage
3	16.6	180	75% of rated voltage	10% of rated voltage	150% Max of Rated voltage	Approx.0.54W
5	46	108				
6	67	90				
9	150	60				
12	270	45				
18	600	30				
24	1060	22				
36	2400	15				
48	4360	11				

- High sensitivity type (B)

Rated voltage (V)	Coil Resistance ±10% (Ω)	Rated Current ±10% (mA)	Pick up Voltage (Max)	Drop out Voltage (Min)	Max continuous Voltage	Power consumption At rated Voltage
3	22.5	133	75% of rated voltage	10% of rated voltage	150% Max of Rated voltage	Approx.0.4W
5	62	80				
6	90	67				
9	203	44				
12	360	33				
18	771	23				
24	1440	17				
36	3240	11.1				
48	5520	9				

➤ Ultra-sensitivity type (B1)

Rated voltage (V)	Coil Resistance ±10% (Ω)	Rated Current ±10% (mA)	Pick up Voltage (Max)	Drop out Voltage (Min)	Max continuous Voltage	Power consumption At rated Voltage
3	36	83	75% of rated voltage	10% of rated voltage	150% Max of Rated voltage	Approx.0.25W
5	100	50				
6	144	42				
9	324	28				
12	576	21				
18	1296	14				
24	2304	10				
36	5184	7				

➤ Coil Rating (AC)

Rated voltage (V)	Coil Resistance ±10% (Ω)	Rated Current ±10% (mA)	Pick up Voltage (Max)	Drop out Voltage (Min)	Max continuous Voltage	Power consumption At rated Voltage
6	18.8	124	80% of rated voltage	15% of rated voltage	110% Max of Rated voltage	Approx.0.75VA
12	79.8	62.5				
24	334	31.2				
42	966	17.9				
48	1340	15.5				
100/110	6840	7.53				
110/120	7360	6.7				
200/220	23800	3.75				
220/240	27400	3.4				

◆ Contact Rating

Type	S20E	S20H	S20M
Resistive load	16A 240VAC	12A 240VAC	8A 240VAC
Max. switching current	17A	12A	8A
Max. switching voltage	277VAC	277VAC	277VAC
Max. switching capacity	3840VA	2880VA	1920VA

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◆ Type List

Terminal style	Contact Form		UL Insulation System approval	Designation(provided with)	
				Sealed type	Sealed type washable
PCB terminal	1A(SPNO)	Terminal pitch 5.0mm	-----	S20E-12-1A	S20E-12-1AS
			F	S20E-12-1A-F	S20E-12-1AS-F
	1B(SPNC)		-----	S20E-12-1B	S20E-12-1BS
			F	S20E-12-1B-F	S20E-12-1BS-F
	1C(SPDT)		-----	S20E-12-1C	S20E-12-1CS
			F	S20E-12-1C-F	S20E-12-1CS-F
	1A(SPNO)	Terminal pitch 3.5mm	-----	S20H-12-1A	S20H-12-1AS
			F	S20H-12-1A-F	S20H-12-1AS-F
	1B(SPNC)		-----	S20H-12-1B	S20H-12-1BS
			F	S20H-12-1B-F	S20H-12-1BS-F
	1C(SPDT)		-----	S20H-12-1C	S20H-12-1CS
			F	S20H-12-1C-F	S20H-12-1CS-F
		2A(DPNO)	-----	S20M-12-2A	S20M-12-2AS
			F	S20M-12-2A-F	S20M-12-2AS-F
	2B(DPNC)	-----	S20M-12-2B	S20M-12-2BS	
		F	S20M-12-2B-F	S20M-12-2BS-F	
	2C(DPDT)	-----	S20M-12-2C	S20M-12-2CS	
		F	S20M-12-2C-F	S20M-12-2CS-F	

◆ Safety Approval

Certified	UL/CUL	TUV
File No.	E188091	R50284283

◆ Safety Approval Rating

Type	UL/CUL	TUV
S20E	NO/NC:20A 277VAC 16A 277VAC 16A 250VAC 12A 30VDC NO: 1HP 480VAC TV-8 125VAC NC: 1/2HP 120V/240V/480VAC	17A 250VAC 16A 30VDC
S20H	NO/NC:17A 277VAC 12A 277VAC 10A 250VAC 10A 30VDC NO: 1HP/480VAC TV-5 125VAC NC: 1/2HP 120V/240V/480VAC	12A 250VAC 10A 30VDC
S20M	NO/NC:12A 277VAC 10A 277VAC 8A 250VAC 10A 30VDC 8A /30VDC NO: 1/2HP 120/240VAC TV-5 125VAC NC: 1/3HP 120/240VAC	12A 250VAC 10A 30VDC

◆ Ordering information

S20 E - 12 B - 1A S - F
 1 2 3 4 5 6 7

1. S20 -- Basic series designation.
2. E:1P - Terminal pitch 5.0mm
 H:1P - Terminal pitch 3.5mm
 M:2P - Terminal pitch 5.0mm
3. 12 -- Coil Voltage (3VDC~48VDC)(6VAC~240VAC)
4. Power Consumption
 Blank -- Standard Type(0.54W)(0.75VA)
 B -- High sensitivity Type(0.4W)
 B1 -- High sensitivity Type(0.25W) (Only for 1P type)
5. 1A -- 1 Form A, Single pole normally open
 1B -- 1 Form B, Single pole normally closed
 1C -- 1 Form C, Single pole double throw
 2A -- 2 Form A, Double pole normally open
 2B -- 2 Form B, Double pole normally closed
 2C -- 2 Form C, Double pole double throw
6. S -- Sealed type washable
 Blank -- Sealed type
7. Insulation standard
 F -- Class F
 Blank -- standard type

◆ Specification

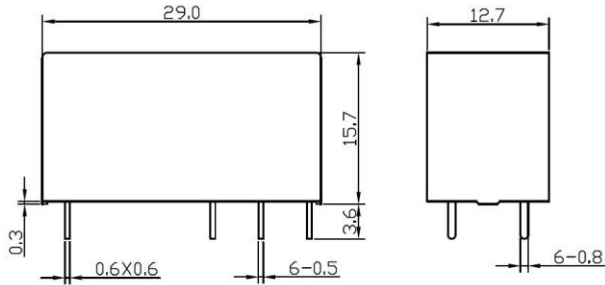
Contact material	Silver Alloy	
Contact resistance	100 mΩ Max	
Operate time	20 ms Max	
Release time	10 ms Max	
Insulation resistance	1000MΩ Min. (DC 500V)	
Dielectric strength	Between open contact : AC 1000V ,50/60Hz 1 min.	
	Between contact and coil : AC 5000V, 50/60Hz 1 min.	
	Between contact circuits : AC 3000V, 50/60Hz 1 min.(for 2P DC type) AC 2500V, 50/60Hz 1 min.(for 2P AC type)	
Vibration resistance	Operating extremes	10~50Hz, amplitude 1.5 mm
	Damage limits	10~50Hz, amplitude 1.5 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	30,000,000 operations (frequency 72,000 operations/hr) 5,000,000 operations (for 2P AC type) (frequency 18,000 operations/hr)
	Electrical	100,000 operations (360 cycles/hr) (frequency 360 operations/hr)
Operating ambient temperature	DC coil: -40~+85°C (no freezing)	
	AC coil: -40~+70°C (no freezing)	
Weight	Approx .12.5 g	

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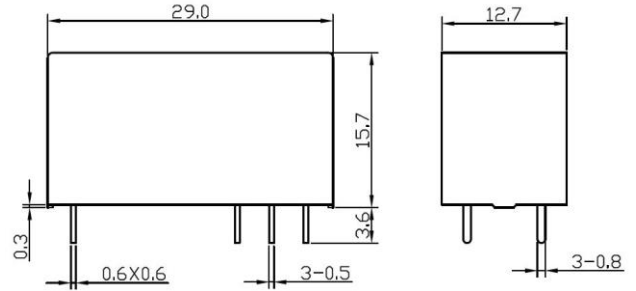
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◆ Outline Dimension

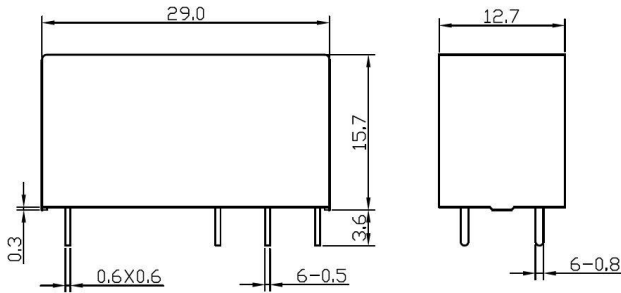
➤ S20E



S20H



➤ S20M



Dimension:mm

TOLERANCE:

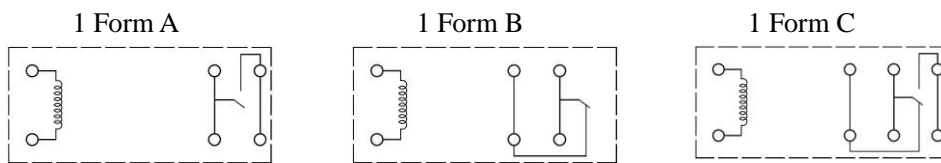
<1mm:±0.2mm

1-5mm:±0.3mm

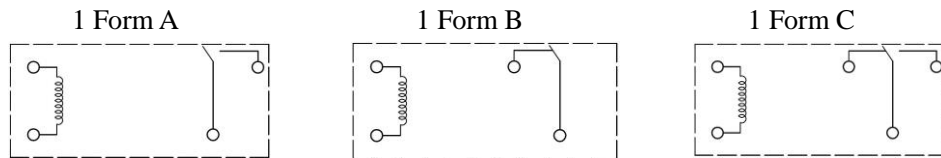
>5mm :±0.4mm

◆ Wiring Diagram

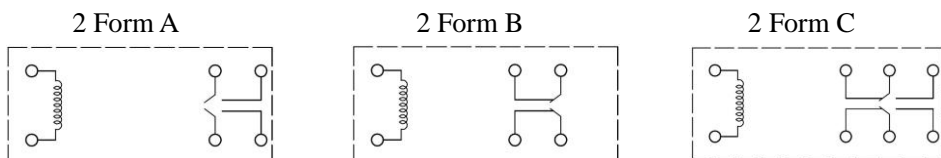
◆ S20E (1P) BOTTOM VIEW



◆ S20H(1P) BOTTOM VIEW

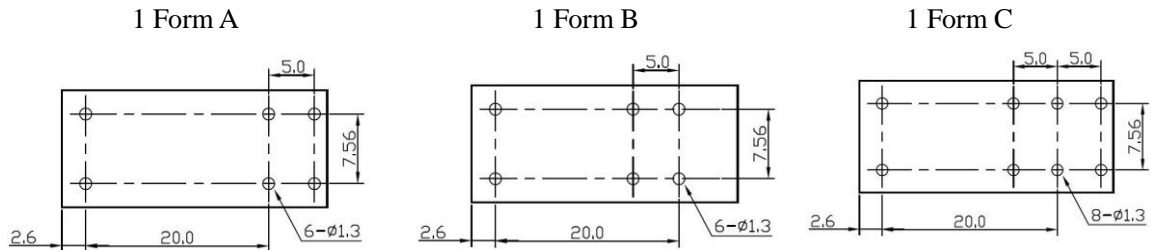


◆ S20M(2P) BOTTOM VIEW

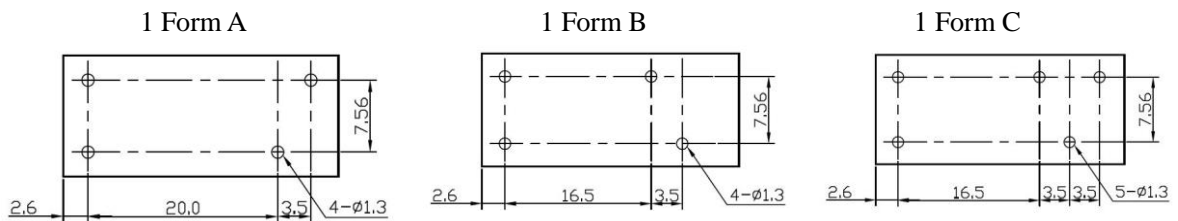


◆ PC BOARD LAYOUT

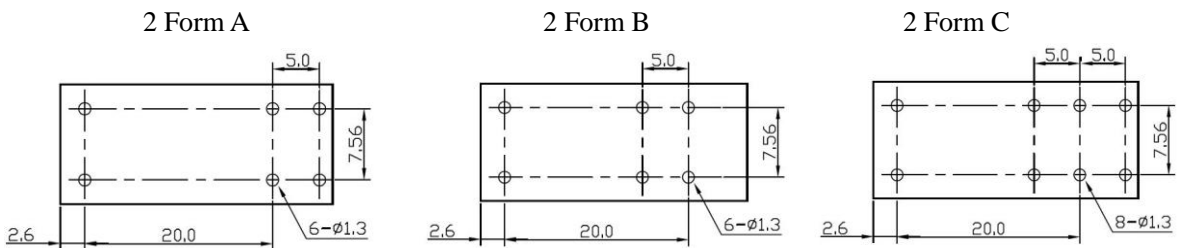
◆ S20E(1P) BOTTOM VIEW



◆ S20H(1P) BOTTOM VIEW

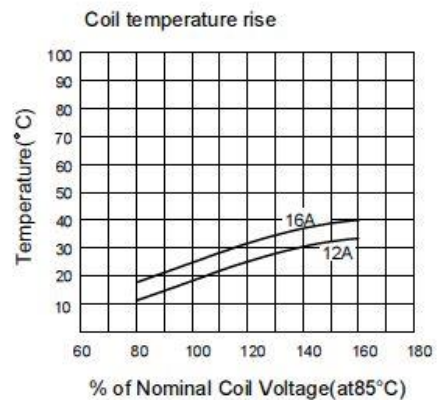
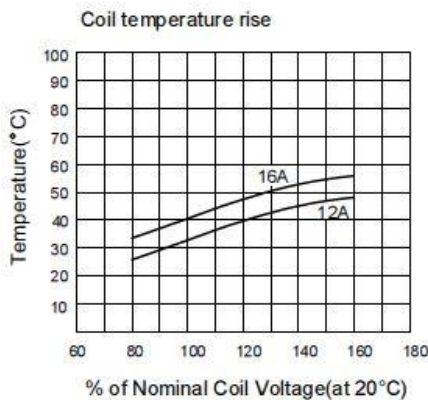


◆ S20M(2P) BOTTOM VIEW



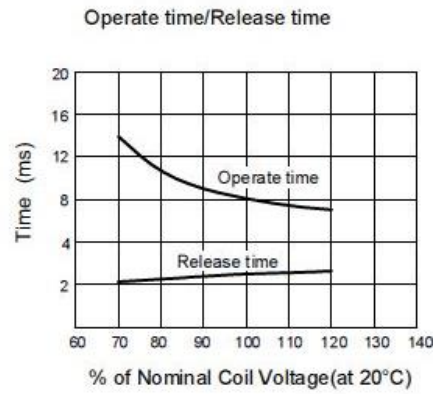
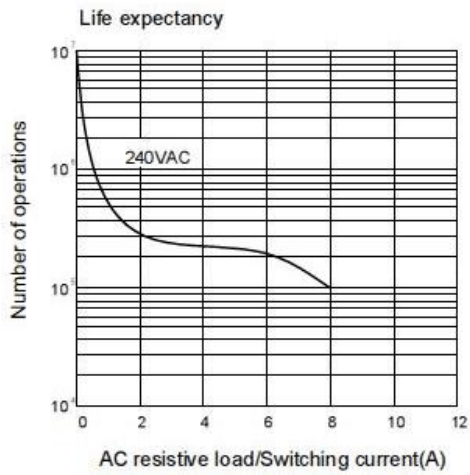
◆ Engineering Data

➤ 1P



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➤ 2P

