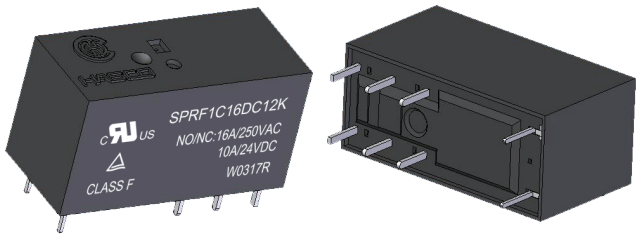
SPR SERIES

POWER RELAY

c US
File No.:E75887

File No.:R 50215857

RoHS Compliant



FEATURES

- Small size for high density mounting
- Up to 5000VAC Dielectric strength

CONTACT RATINGS

Contact Arrangement	1A, 1B, 1C	2A, 2B, 2C
Contact Resistance	≤100mΩ (1A 24VDC)	
Contact Material	AgSnO	
Contact Rating(Resistive)	20A 277VAC 16A 250VAC 16A 24VDC	8A 250VAC 8A 24VDC
Max. Switching Voltage	440VAC/300VDC	
Max. Switching Current	20A	8A
Max. Switching Power	5540VA	2000VA
Mechanical Life	1×10^7 operations	
Electrical Life	See more details at "safety approval ratings"	

CHARACTERISTICS

Insulation Resistance		1000MΩ(at 500VDC)
Dielectric Strength	Between coil & contacts	5000VAC 1min
	Between open contacts	1000VAC 1min
	Between contacts sets	2500VAC 1min
Operate time (at nomi. volt.)		≤10ms
Release time (at nomi. volt.)		≤5ms
Humidity		35% to 85% RH
Operation temperature		-40°C ~ +85°C/-40°C ~ +105°C
UL Class B/F		Insulation System Class B/F
Shock Resistance	Functional	98m/s²
	Destructive	980m/s²
Vibration resistance		10Hz to 150Hz 10g/5g
Unit weight		Approx. 13.5g
Construction		Flux Tight Type, Sealed Type

Notes:1) The data shown above are initial values.
2) Please find coil temperature curve in the characteristic curves.

ORDERING INFORMATION

SPR F 2C 8 DC24 K - E - W - XXXX

Model

F:Class F
Blank:Claas B

Contact arrangement:
1A=1 Form A; 2A=2 Form A
1B=1 Form B; 2B=2 Form B
1C=1 Form C; 2C=2 Form C

Contact Rating:12=1 Form 12A;
16=1 Form 16A; 20=1 Form 20A;
8=2 Form 8A

Coil Voltage

Pole Distance:K=5mm R=3.5mm(12A Only)

E:Flux Tight Type Blank:Sealed Type

W:Pre-make Type Blank:Silver Tin Oxide

Customer Code

Notes:
1. PC board assembled with dust cover type and flux tight type relays can not be washed and/or coated.
2. Dust cover type and flux tight type relays can not be used in the environment with dust, or H_2S, SO_2, NO_2 or similar gaseous environment etc.

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COIL DATA at 25°C

Nominal Voltage VDC	Operate Voltage (Max.) VDC	Release Voltage (Min.) VDC	*Max. Allowable Voltage VDC	Coil Resistance Ω±10%
5	3.5	0.5	6.5	62
6	4.2	0.6	7.8	90
9	6.3	0.9	11.7	203
12	8.4	1.2	15.6	360
24	16.8	2.4	31.2	1440
48	33.6	4.8	62.4	5760
60	42.0	6.0	78.0	7500
110	77.0	11.0	143.0	25200

Note:

"*Max Allowable Voltage": The relay coil can endure max allowable voltage for a short period time only.

COIL

Coil Power	DC:400mW (60V、110V:480mW)

SAFETY APPROVAL RATINGS

UL&CUL	1 Form	N.O.:20A 277VAC, 6×10^3OPS N.O./N.C.:16A 24VDC, 6×10^3OPS N.C.:16A 250VAC, 6×10^3OPS N.O./N.C.:16A 277VAC(85°C), 6×10^3OPS N.O.:1HP 120VAC(50°C), 6×10^3OPS N.O./N.C.:2HP 240VAC, Horse Power, 6×10^3OPS N.O./N.C.:12A 250VAC, 6×10^3OPS N.O./N.C.:10A 24VDC, 6×10^3OPS
	-W	N.O.:5A 240VAC Ballast, 6×10^3OPS N.O.:8A 277VAC, Electronic Ballast, 2×10^4OPS(50°C)
	2 Form	N.O./N.C.:8A 24VDC, 6×10^3OPS N.O./N.C.:8A 250VAC, 6×10^3OPS N.O./N.C.:1/2 HP 120VAC, 6×10^3OPS

TüV	1 Form	N.O.:20A 277VAC, 85°C, 3×10^4 OPS N.O.:17A 277VAC, 105°C, 8×10^4 OPS N.O./N.C.:16A 277VAC, 85°C, 3×10^4 OPS N.O.:17A 30VDC, 105°C, 1×10^5 OPS N.O./N.C.:16A 24VDC, 85°C, 5×10^4 OPS
	2 Form	N.O.:8A 277VAC/240VAC, 85°C, 6×10^4OPS N.C.:8A 277VAC/240VAC, 85°C, 1×10^5OPS N.O.:8A 24VDC, 85°C, 1×10^5OPS N.O./N.C.:8A 277VAC/240VAC, 85°C, 8×10^4OPS N.O./N.C.:8A 24VDC, 85°C, 5×10^4OPS N.O./N.C.:10A 250VAC, 105°C, 2×10^4OPS

NOTES:

1. All values without specified temperature are at 25°C.
2. The above lists the typical loads only. Other loads may be available upon request.

SPR SERIES

POWER RELAY

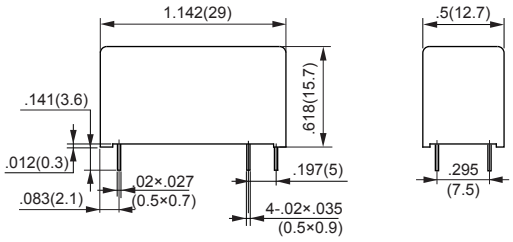
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT.

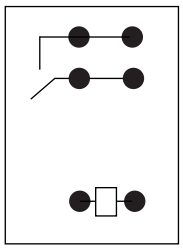
Unit: inch (mm)

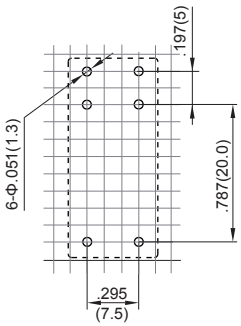
Outline Dimensions	Wiring Diagram (Bottom view)	PCB Layout (Bottom view)

16A/20A K Type

1A







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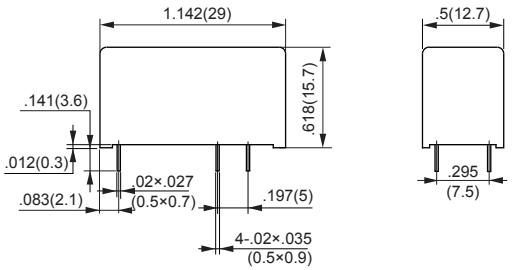

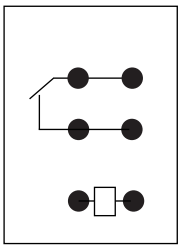

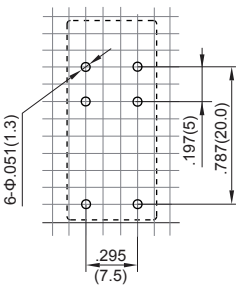

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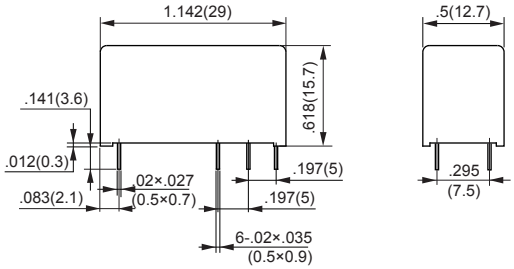
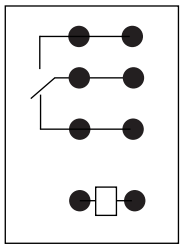
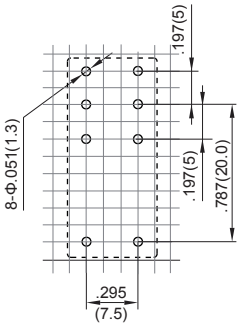






Unless otherwise specified tolerances are:		
≤1mm	＞1mm and ≤5mm	＞5mm
±0.2mm	±0.3mm	±0.4mm

* The tolerance without indicating for PCB layout is always ±0.1mm.

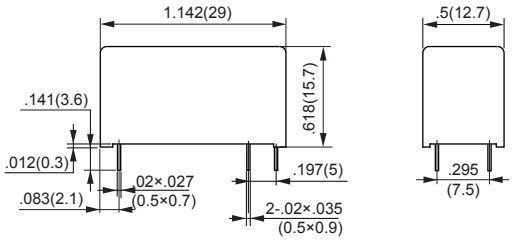
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT.

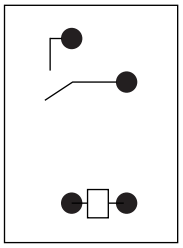
Unit: inch (mm)

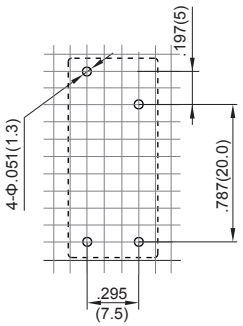
Outline Dimensions	Wiring Diagram (Bottom view)	PCB Layout (Bottom view)

12A K Type

1A







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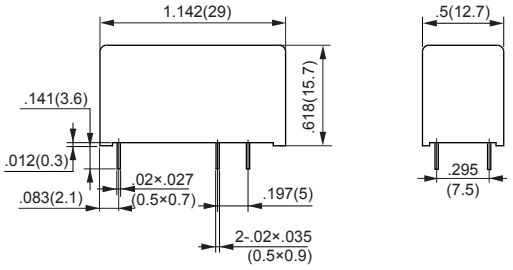
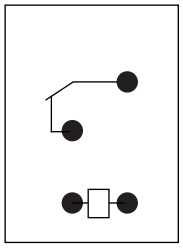
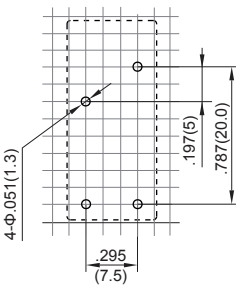
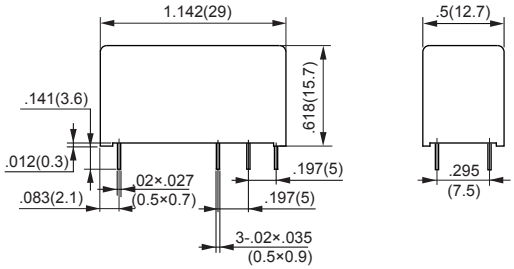
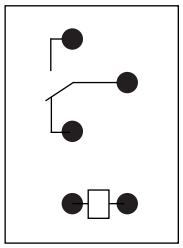


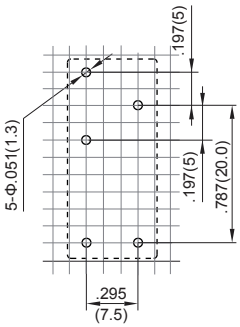




1C







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POWER RELAY

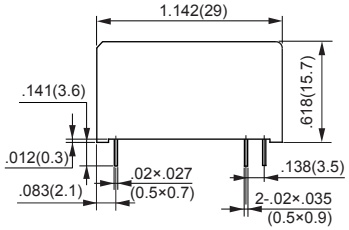
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT.

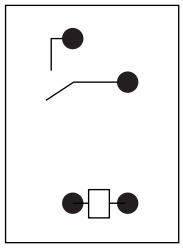
Unit: inch (mm)

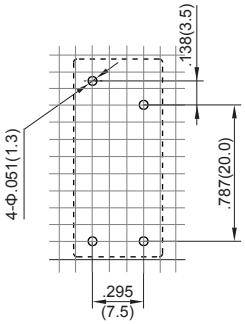
Outline Dimensions	Wiring Diagram (Bottom view)	PCB Layout (Bottom view)

12A R Type

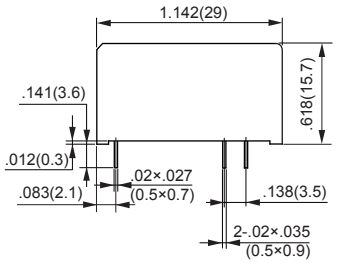
1A

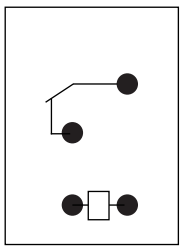


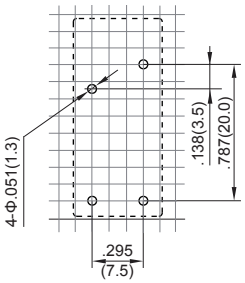




1B







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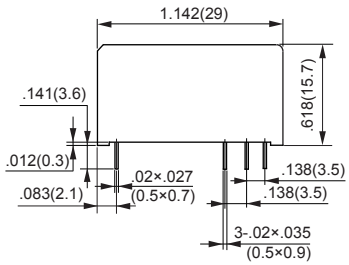

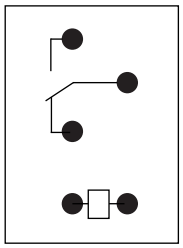

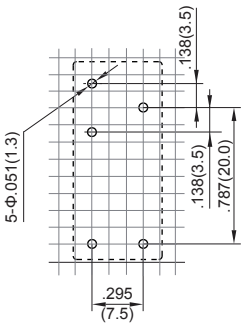

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POWER RELAY

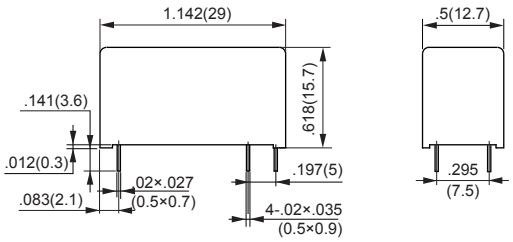
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT.

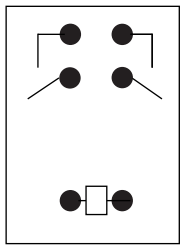
Unit: inch (mm)

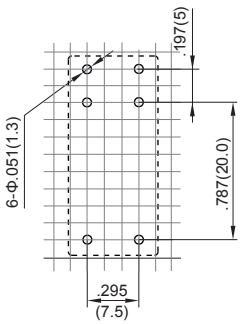
Outline Dimensions	Wiring Diagram (Bottom view)	PCB Layout (Bottom view)

8A K Type

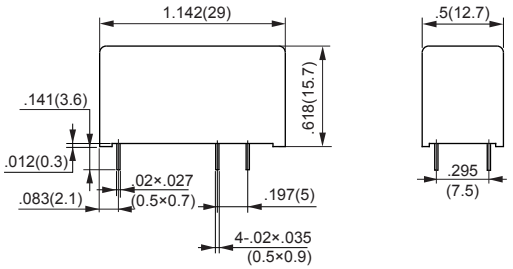
2A

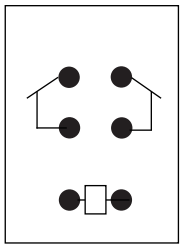


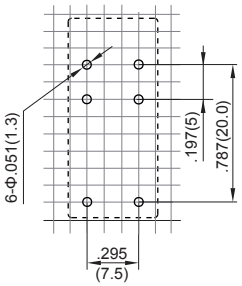




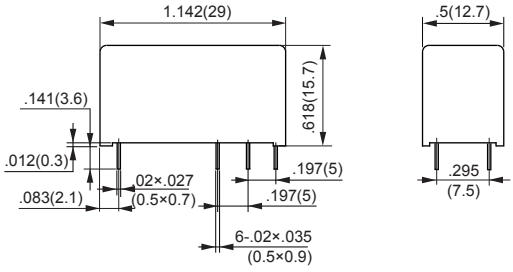
2B

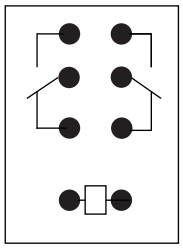


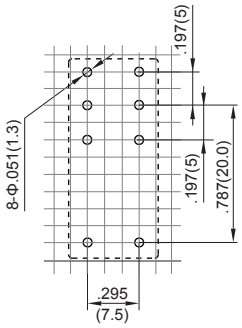




2C







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±0.2mm	±0.3mm	±0.4mm

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SPR SERIES

POWER RELAY

PACKAGING SPECIFICATION

TUBE	INNER CARTON	OUTER CARTON	OUTER CARTON SIZE
40PCS	1000PCS	2000PCS	L580mm*W400mm*H175mm

APPLICATION GUIDELINES

Automatic Soldering

* Flow solder is the optimum method for soldering.
* Adjust the level of solder so that it does not overflow onto the top of the PC board.
* Unless otherwise specified, solder under the following conditions depending on the type of relay.

Preheat time 20°C-100°C	Rising slope 20°C-120°C	Decreasing slope Peak-150°C	Welding temperature 255°C-265°C
90±5 seconds	＜3°C/s	＜4°C/s	3~5s

Hand Soldering

* Keep the tip of the soldering iron clean.

Solder Iron	30W or 60W
Iron Tip Temperature	Approx. 350°C 662°F
Solder Time	Within approx. 3 seconds

* Immediate air cooling is recommended to prevent deterioration of the relay and surrounding parts due to soldering heat.
* Although the sealed type relay can be cleaned, avoid immersing the relay into cold liquid (such as washing solvent) immediately after soldering. Doing so may deteriorate the sealing performance.

Discard the dropped product