



File No.:E75887



File No.:R 50261062



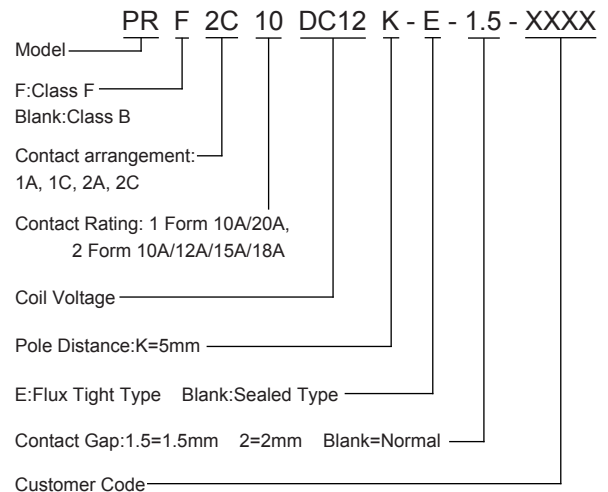
## FEATURES

- High breakdown voltage (5000VAC between coil and contact)
- Large switching capacity (20A 277VAC)
- Typical Applications:
  - General electronic controls or systems, Machine tool controls, Energy control circuits, Industrial machinery controls, Consumer controls (Air-conditioner, Refrigerator, Microwave Oven, etc.), Vending machine, Office machine, etc.

## CONTACT RATINGS

Contact Arrangement	1A, 1C	2A, 2C
Contact Resistance	≤50mΩ(1A 24VDC)	
Contact Material	AgSnO <sub>2</sub> , AgSnOIn	
Contact Rating(Resistive)	10A/277VAC 10A/30VDC	20A/277VAC 20A/30VDC
	10A/277VAC 5A/30VDC	12A/277VAC 6A/30VDC 15A/277VAC 18A/277VAC
Max. Switching Voltage	277VAC/30VDC	
Max. Switching Current	10A	20A
Max. Switching Power	2770VA/300W	5540VA/600W
Mechanical Life	Normal:1×10 <sup>7</sup> OPS	1.5mm:5×10 <sup>5</sup> OPS
Electrical Life	2mm:3×10 <sup>5</sup> OPS	
	See more details at "safety approval ratings"	

## ORDERING INFORMATION



- 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<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub> or similar gaseous environment etc.

## CHARACTERISTICS

Insulation Resistance	1000MΩ (at 500VDC)	
Dielectric Strength	Between coil & contacts	5000VAC 1min
	Between open contacts	1000VAC 1min(Normal contact gap) 2000VAC 1min(1.5mm contact gap) 2500VAC 1min(2mm contact gap)
	Between contact sets	3000VAC 1min
Operate time (at nomi. volt.)	≤15ms	
Release time (at nomi. volt.)	≤5ms	
Humidity	98% RH	
Operation temperature	-40°C~+85°C	
UL Class B/F	Insulation System Class B/F	
Shock Resistance	Functional	98m/s <sup>2</sup>
	Destructive	980m/s <sup>2</sup>
Vibration resistance	10Hz ~ 55Hz 1.5mm DA	
Unit weight	Approx. 18g	
Construction	Sealed Type, Flux Tight Type	

Notes: The data shown above are initial values

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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%		
				Normal	1.5mm	2mm
5	4.0	0.5	6.0	47	32	18
6	4.8	0.6	7.2	68	45	26
9	7.2	0.9	10.8	155	102	58
12	9.6	1.2	14.4	275	180	103
24	19.2	2.4	28.8	1100	720	412
48	38.4	4.8	57.6	4400	2880	1650
110	80.0	11.0	120.0	14400	—	—

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



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# RELAYS

## COIL

Coil Power	Normal Contact Gap: Approx. 530mW 1.5mm Contact Gap: 800mW 2mm Contact Gap: 1400mW 110V: 840mW
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## SAFETY APPROVAL RATINGS

UL&CUL	Form 1	N.O./N.C.:16A/16A 277VAC, G.P., 1×10 <sup>5</sup> OPS N.O./N.C.:16A/16A 30VDC, 5×10 <sup>4</sup> OPS N.O./N.C.:1/2HP 120VAC, 6×10 <sup>3</sup> OPS N.O./N.C.:1-1/2HP 240VAC, 6×10 <sup>3</sup> OPS N.O.:10A 277VAC Tungsten, 2.5×10 <sup>4</sup> OPS N.O.:TV-10 277VAC, 2.5×10 <sup>4</sup> OPS N.O./N.C.:20A 277VAC/30VDC, 6×10 <sup>3</sup> OPS N.O./N.C.:10A/10A 277VAC, 6×10 <sup>3</sup> OPS N.O./N.C.:10A/10A 30VDC, 6×10 <sup>3</sup> OPS N.O./N.C.:1/4HP 120VAC, 6×10 <sup>3</sup> OPS N.O./N.C.:1/2HP 240VAC, 6×10 <sup>3</sup> OPS
	Form 2	N.O.:18A 277VAC, 85°C, 2.5×10 <sup>4</sup> OPS N.O.:15A 277VAC, G.P., 6×10 <sup>3</sup> OPS N.O.:12A 277VAC, 6×10 <sup>3</sup> OPS N.O./N.C.:10A/10A 277VAC, G.P., 6×10 <sup>3</sup> OPS N.O./N.C.:5A/5A 30VDC, 6×10 <sup>3</sup> OPS N.O./N.C.:1/8HP 120VAC, 6×10 <sup>3</sup> OPS N.O.:1/4HP 120VAC, 6×10 <sup>3</sup> OPS N.O.:1/2HP 240VAC, 6×10 <sup>3</sup> OPS N.O.:1/3HP 120VAC, 6×10 <sup>3</sup> OPS N.O.:3/4HP 240VAC, 6×10 <sup>3</sup> OPS N.O.:TV-5 120VAC/277VAC, 2.5×10 <sup>4</sup> OPS N.O.:TV-8 277VAC, 2.5×10 <sup>4</sup> OPS

TüV	Form 1	N.O.:20A 277VAC, 1×10 <sup>5</sup> OPS N.O./N.C.:16A/16A 277VAC, 1×10 <sup>5</sup> OPS N.O./N.C.:16A/16A 30VDC, 6×10 <sup>4</sup> OPS
	Form 2	N.O.:18A 277VAC, 85°C, 5×10 <sup>4</sup> OPS N.O.:15A 277VAC, 5×10 <sup>4</sup> OPS N.O.:10A 277VAC, 5×10 <sup>4</sup> OPS N.O./N.C.:12A/6A 277VAC, 2×10 <sup>4</sup> OPS N.O./N.C.:12A/6A 30VDC, 2×10 <sup>4</sup> OPS N.O.:12A 277VAC; N.C.:6A 277VAC, 5×10 <sup>4</sup> OPS N.O.:12A 30VDC; N.C.:6A 30VDC, 5×10 <sup>4</sup> OPS N.O./N.C.:5A/5A 250VAC, 5×10 <sup>4</sup> OPS N.O./N.C.:5A/5A 30VDC, 5×10 <sup>4</sup> OPS

### 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.

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# RELAYS

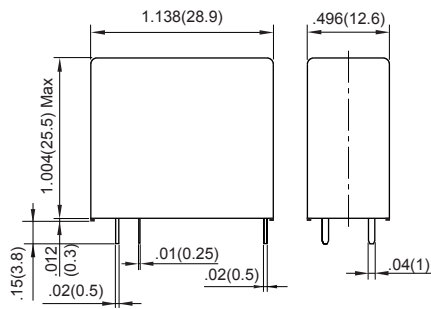
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT.

Unit: inch(mm)

Outline Dimensions

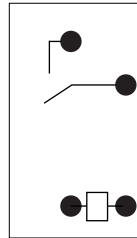
Wiring Diagram  
(Bottom view)

PCB Layout  
(Bottom view)

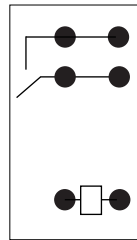


Contact Arrangement "A"

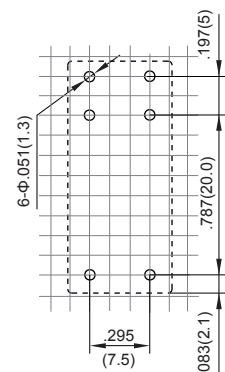
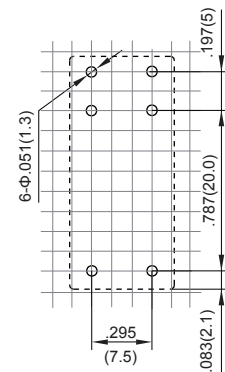
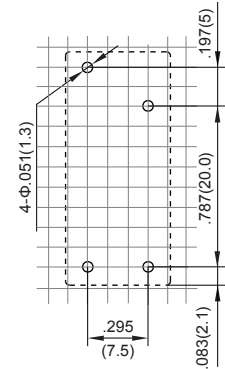
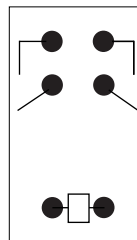
1A10



1A20



2A



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.

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# RELAYS

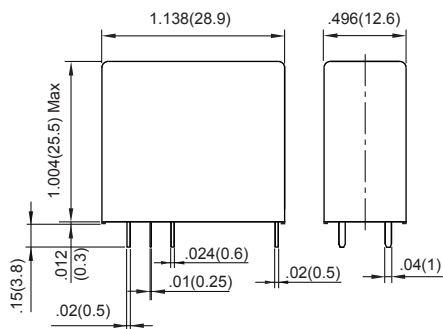
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## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT.

Unit: inch(mm)

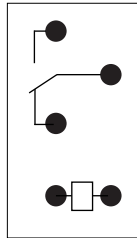
### Outline Dimensions



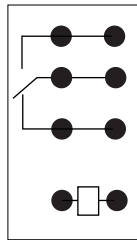
Contact Arrangement "C"

### Wiring Diagram (Bottom view)

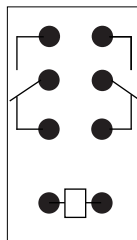
1C10



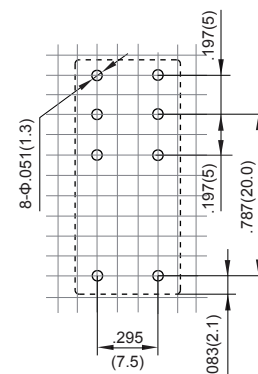
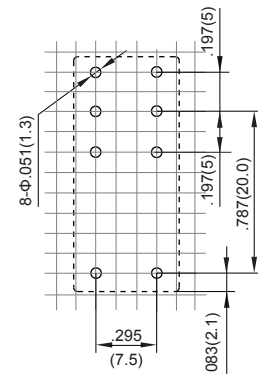
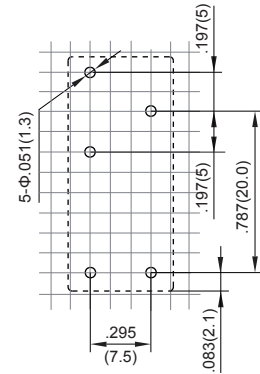
1C20



2C



### PCB Layout (Bottom view)



Unless otherwise specified tolerances are:

≤1mm	>1mm and ≤5mm	>5mm
±0.2mm	±0.3mm	±0.4mm

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## PACKAGING SPECIFICATION

BLISTER BOX	INNER CARTON	OUTER CARTON	OUTER CARTON SIZE
30PCS	600PCS	1200PCS	L475mm*W275mm*H290mm

## 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

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