

# HR-CR3

## 5A to 16A next generation general purpose power relay

### Features

- Wide contact arrangements from 1 form A to 2 form C
- Conforms to various safety approvals
- Clearances and creepage distance more than 8mm
  - Surge strength: 10,000V
- High capacity 16A (K type) available

### Applications

- Industrial control, Home appliance

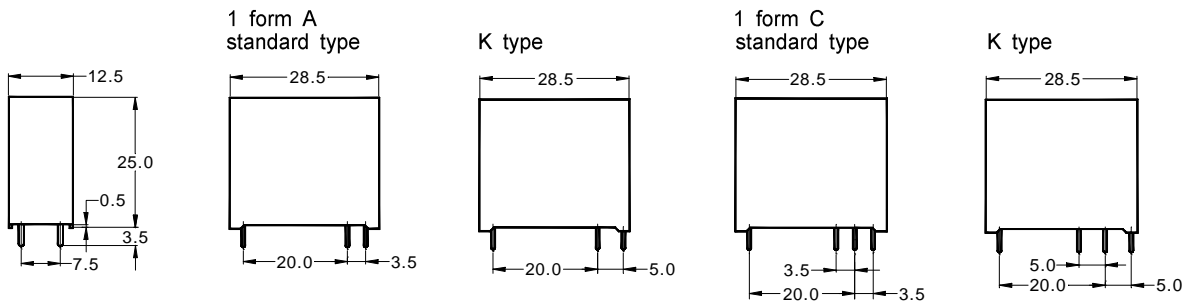


Approx. the actual size

### 1 Pole type

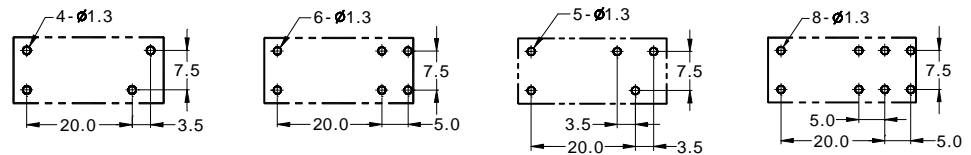
#### Dimensions (mm)

To convert into inches, multiply by 0.03937



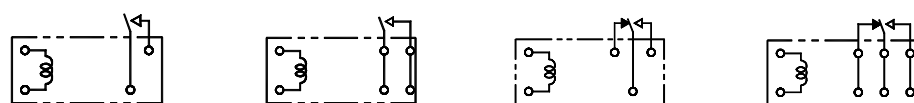
### PC Board Layout

Copper-side view



### Schematic

Copper-side view

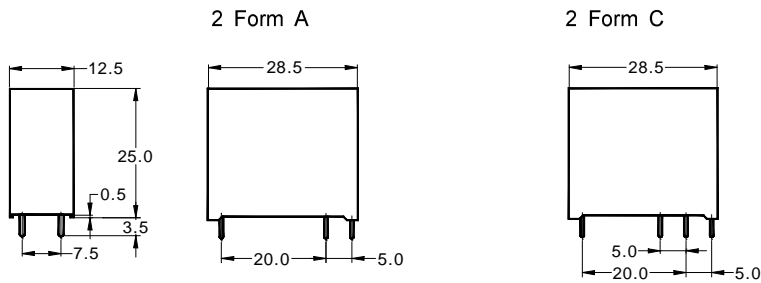


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## 2 Pole type

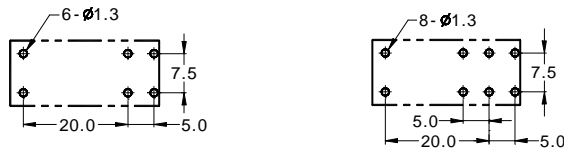
### Dimensions (mm)

To convert into inches, multiply by 0.03937



### PC Board Layout

Copper-side view



### Schematic

Copper-side view



# HR-CR3

## Contact data

Arrangement	1 Form A (SPST) to 2 Form C (DPDT)			
Contact material	Ag Alloy			
Initial contact resistance	100m $\Omega$ max.			
Type	2 Pole type 2 Form A, C	1 Pole type		
		Standard 1 Form A, C	K type	
			1 Form C	1 Form A
Rated load, resistive	5A 30VDC 5A 250VAC TV-3	10A 30VDC 10A 250VAC TV-8	10A 30VDC 10A 250VAC	16A 30VDC 16A 250VAC
Maximum carry current	5A	10A	16A	16A
Maximum switching capacity	with DC voltage: with AC voltage:	150W 1,250VA	300W 2,500VA	300W 2,500VA 480W 3,840VA
Maximum switching voltage	250VAC Resistive			
Minimum switching rating <sup>1)</sup>	100mA 5VDC			

<sup>1)</sup> Min. Switching Load mentioned above are reference values. Therefore it is recommended to perform the confirmation test with the actual load before production since reference values may vary according to switching frequencies, environmental conditions and expected reliability levels.

## Coil data

Nominal voltage	5VDC to 48VDC
Nominal power consumption <sup>2)</sup>	530mW, 720mW
Operate voltage <sup>3)</sup>	80% of nominal voltage
Release voltage <sup>4)</sup>	10% of nominal voltage

<sup>2), 3), 4)</sup>The values depend on coil voltage, see Part selection chart

## General data

Operate time	15ms max. at nominal voltage
Release time	5ms max. at nominal voltage
Initial insulation resistance	1,000 M $\Omega$ min. (500VDC)
Dielectric strength	Between open contacts: 1,000VAC <sub>rms</sub> for 1 minute Between contacts and coil: 5,000VAC <sub>rms</sub> for 1 minute
Surge strength	Between contacts and coil: 10,000V
Expected life	Mechanical: More than 10,000,000 operations Electrical: More than 100,000 operations at rated load
Vibration resistance	Functional: 10~55Hz dual amplitude: 1.5mm Destructive: 10~55Hz dual amplitude: 1.5mm
Shock resistance	Functional: 10G min. Destructive: 100G min.
Ambient temperature	-40°C to +70°C (with no icing)
Humidity	45% to 85% RH
Weight	17g approx.

Note: The above figures are initial values

# HR-CR3

## Part number description



### HR-CR3

#### No. of poles

- 1: Single pole
- 2: Double poles

#### Contact arrangement

- 1: Form C contact
- 3: Form A contact

#### Coil voltage

- DC05: 5VDC
- DC06: 6VDC
- DC09: 9VDC
- DC12: 12VDC
- DC18: 18VDC
- DC24: 24VDC
- DC48: 48VDC

#### Contact rating

- None: Standard 5A 30VDC
- 5A 250VAC (2 Form A, C)
- 10A 30VDC
- 10A 250VAC (1 Form A, C)

- K: 16A 30VDC
- 16A 250VAC (1 Form A,C type only)

#### Enclosure

- None: Sealed type, black
- C: Flux free type, clear

#### Coil sensitivity

- None: Standard (720mW)
- H: High Sensitive (530mW)

Part number description is provided for reference, part number cannot be arbitrarily composed. Refer to the part numbers shown in the table below. Special designs to customer specifications are possible; please contact HR.

## Part selection

Fill in the codes to the part number by selecting them from the part number description

Part number	Nominal voltage (VDC)	Coil resistance ( $\Omega \pm 10\%$ )	Nominal current (mA)	Must operate voltage (VDC)	Must release voltage (VDC)	Max voltage (VDC)	Nominal power (mW)
<b>Standard coil 1 Form C, 1 Form A, 2 Form C, 2 Form A</b>							
HR-CR3□□DC05□□	5	35	144	4	0.5	6.5	720
HR-CR3□□DC06□□	6	50	120	4.8	0.6	7.8	
HR-CR3□□DC09□□	9	112	80	7.2	0.9	11.7	
HR-CR3□□DC12□□	12	200	60	9.6	1.2	15.6	
HR-CR3□□DC18□□	18	450	40	14.4	1.8	23.4	
HR-CR3□□DC24□□	24	800	30	19.2	2.4	31.2	
HR-CR3□□DC48□□	48	3,200	15	38.4	4.8	62.4	
<b>Sensitive coil 1 Form C, 1 Form A, 2 Form C, 2 Form A</b>							
HR-CR3□□DC05□□H	5	47	106	4	0.5	6.5	530
HR-CR3□□DC06□□H	6	68	88	4.8	0.6	7.8	
HR-CR3□□DC09□□H	9	153	59	7.2	0.9	11.7	
HR-CR3□□DC12□□H	12	273	44	9.6	1.2	15.6	
HR-CR3□□DC18□□H	18	620	29	14.4	1.8	23.4	
HR-CR3□□DC24□□H	24	1,085	22.1	19.2	2.4	31.2	
HR-CR3□□DC48□□H	48	4,350	11.0	38.4	4.8	62.4	

Note: All values in the chart are measured at 23℃

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