

## K4121PR 120 Vac Miniature Relay



### General

This is a plastic sealed relay. All the plastic parts are annealed and out-gassed to fully ensure the stability of both chemical and physical characteristics.

Some of the applications that this relay can be used in is transportation power station control equipment, refrigerators, building control equipment, office machines, coin operated machines, amusement devices, and medical equipment.

### Features

- Extra long life – Min.  $10^8$  mechanical operations (DC type)
- 4 contact arrangements
- Applicable to low to high level loads (100 $\mu$ A to 10A)
- Amber sealed types available
- Bifurcated contact types available as HC4D

### Specifications

Relay: HC4E-H

Socket: HC4-HSF-K

### Characteristics:

Operate Time: Approx. 10 ms  
(DC, AC type)

Release Time: Approx. 5 ms  
(DC, AC type)

### Contacts:

Contact Arrangement		1 Form C	2 Form C	4 Form C
Rating (Resistive)	Nominal switching capacity	5 A, 250 Vac	3 A, 250 Vac	2 A, 250 Vac
	Max. switching power	1,250 VA	700 VA	500 VA
	Max. switching voltage	250 Vac		
	Max. switching current	5 A	3 A	2 A
Conditions for operation, transport and storage (Not freezing and condensing at low temperature)	Ambient Temp.	-40 C to +60 C (-40 F to +140 F)		
	Humidity	5 to 85% R.H.		
Ambient Air Pressure		760 mmHg +20% (1.013 mb +20%)		



Expected Electrical Life (at 20 cpm)	Voltage		125 Vac	250 Vac	30 Vdc		Expected Life
	Load		Resistive (cos phiv=1)	Resistive (cos phiv=1)	Resistive	Inductive	
	HC1E (1 Form C)	Current	5 A	5 A	3 A	1 A	2 x 10 <sup>5</sup>
	HC2E (2 Form C)	Current	3 A	3 A	2 A	1.7 A	
HC4E (4 Form C)	Current	2 A	2 A	2 A	0.6 A		
Expected Mechanical Life (at 180 cpm)	DC type: 10 <sup>8</sup> , AC type: 5x10 <sup>7</sup>						

**Coil Data:**

**DC Type at 20° C (68° F)**

Coil Voltage Vdc	Pick-up Voltage Vdc (max.)	Drop-out Voltage Vdc (min.)	Max. Allowable Voltage, Vdc	Coil Resistance , Ohm (± 10%)	Nominal Coil Current, mA (± 10%)	Operating Power, W	
						Nominal	Minimum
6	4.8	0.6	6.6	40	150	.9	.58
12	9.6	1.2	13.2	160	75	.9	.58
24	19.2	2.4	26.4	650	37	.9	.58
48	38.4	4.8	52.8	2,600	18.5	.9	.58
110	88.0	11.0	121.0	10,000	10	1.0	.64

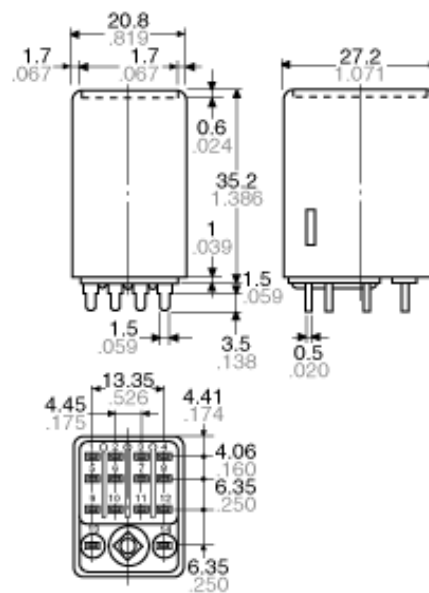
**AC Types (50/60 Hz) at 60 Hz, 20° C (68° F)**

Coil Voltage Vac	Pick-up Voltage Vac (max.)	Drop-out Voltage Vac (min.)	Max. Allowable Voltage, Vac	Nominal Coil Current, mA (± 20%)	Operating Power, VA	
					Nominal	Minimum
6	4.8	1.8	6.6	200	1.20	0.77
12	9.6	3.6	13.2	100		
24	19.2	7.2	26.4	50		
48	38.4	14.4	52.8	25		
110/120	96	36	132	10.9/11.9		
220/240	176.0	66	264	6.0/6.5		

- The range of coil current is  $\pm 15\%$  for AC (60 Hz) and  $\pm 10\%$  for DC, at 20° C.
- The relay is applicable to the range of 80% to 110% of the nominal coil voltage. However, it is recommended that the relay be used in the range of 85% to 110% to take temporary voltage variations into consideration.
- The coil resistance of DC types is the measured value at a coil temperature of 20° C. Please compensate coil resistance by  $\pm 0.4\%$  for each degree centigrade coil temperature change.
- All AC 240 V types are rated for double coil voltages, both AC 220 V and AC 240 V.
- For use with 220 Vdc or 240 Vdc, connect a resistor as suggested in the chart below, in series with the 110 Vdc relay.

Voltage	1 Form C, 2 Form C, 3 Form C, 4 Form C
220 Vdc	11k ohm (5 W)
240 Vdc	13k ohm (5 W)

**Dimensions:**



**Figure 1. K4121PR Miniature Relay dimensions in mm (inches).**