

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



Approvals (in process)



UL



CUL



CE

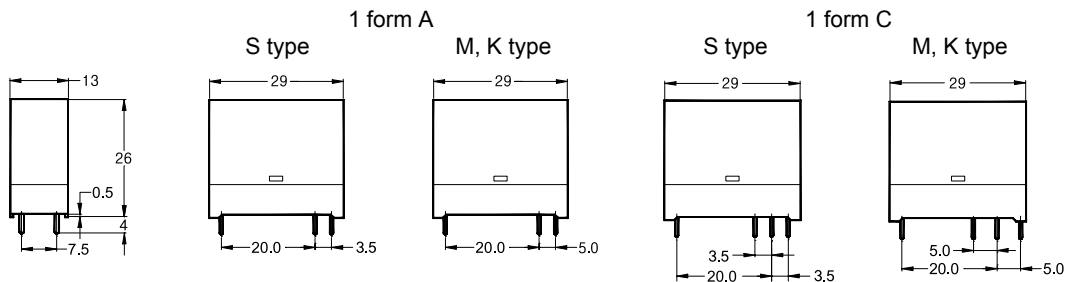
Applications

- Industrial control, Home appliance

PC Board type (1 Pole)

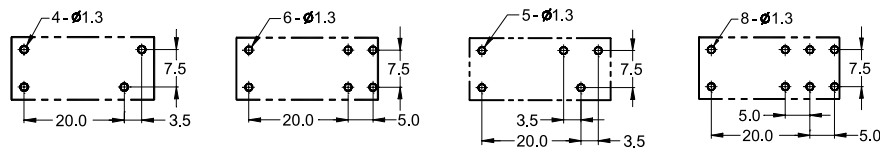
Dimensions (mm)

To convert into inches, multiply by 0.03937



PC Board Layout

Copper-side view



Schematic

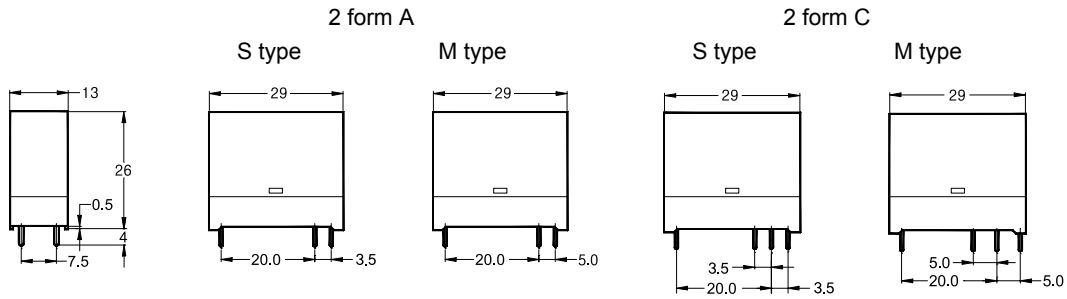
Copper-side view



PC Board type (2 Pole)

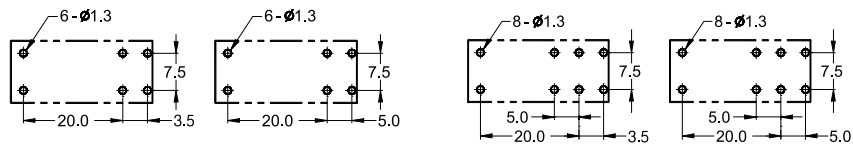
Dimensions (mm)

To convert into inches, multiply by 0.03937



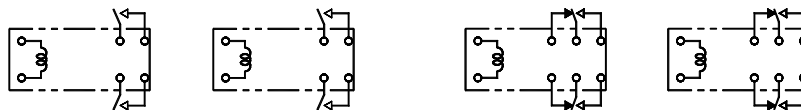
PC Board Layout

Copper-side view



Schematic

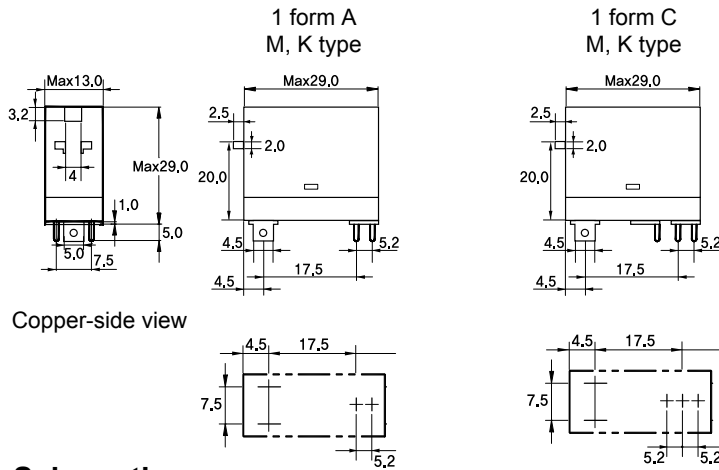
Copper-side view



Socket plug-in, Solder type (1 Pole)

Dimensions (mm)

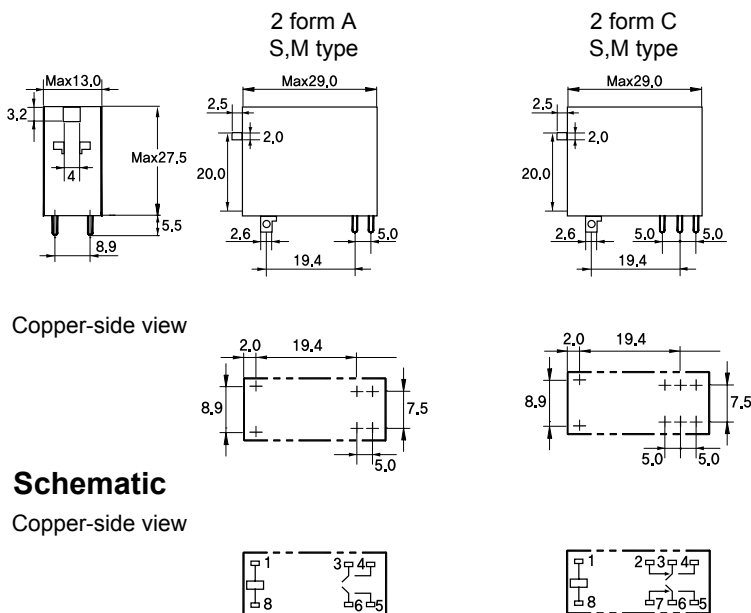
To convert into inches, multiply by 0.03937



Socket plug-in, Solder type (2 Pole)

Dimensions (mm)

To convert into inches, multiply by 0.03937



Contact data

Arrangement	1 Form A (SPST) to 2 Form C (DPDT)		
Contact material	Ag Alloy		
Initial contact resistance	100mΩ max.		
Type	S type	M type	K type
	1,2 Form A, C	1,2 Form A, C	1 Form A, C
Rated load, resistive	5A 30VDC 5A 250VAC	12A 30VDC 12A 250VAC	16A 30VDC 16A 250VAC
Maximum carry current	5A	12A	16A
Maximum switching capacity	with DC voltage: with AC voltage:	150W 1,250VA	360W 3,000VA
Maximum switching voltage	250VAC		
Minimum switching rating ¹⁾	100mA 5VDC		

¹⁾ 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	6VDC to 110VDC / 6VAC to 240VAC	
Nominal power consumption ²⁾	530mW / 2.0 to 2.5VA Approx.	
Operate voltage ³⁾	AC/DC coil	80% of nominal voltage
Release voltage ⁴⁾	DC coil AC coil	10% of nominal voltage 30% of nominal voltage

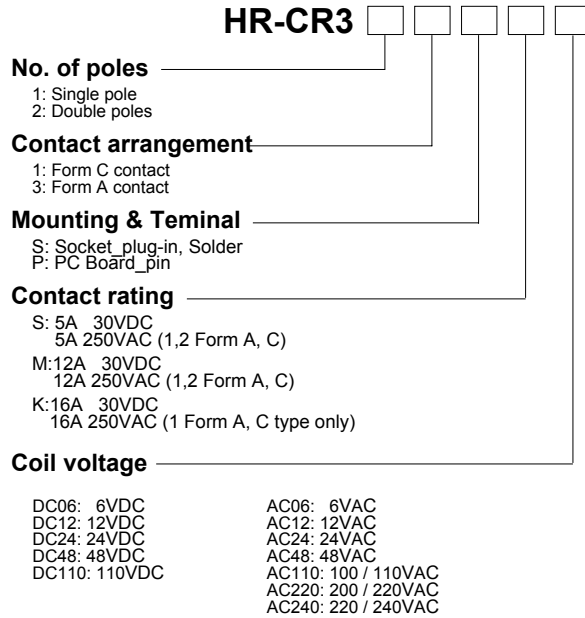
^{2), 3), 4)} The values depend on coil voltage, see Part selection chart

General data

Operate time	20ms max. at nominal voltage	
Release time	10ms max. at nominal voltage	
Initial insulation resistance	1,000 MΩ min. (500VDC)	
Dielectric strength	Between open contacts: Between contacts and coil:	1,000VAC _{rms} for 1 minute 5,000VAC _{rms} for 1 minute
Surge strength	Between contacts and coil:	10,000V
Expected life	Mechanical: Electrical:	More than 10,000,000 operations More than 100,000 operations at rated load
Vibration resistance	Functional: Destructive:	10 ~ 55Hz dual amplitude: 1.5mm 10 ~ 55Hz dual amplitude: 1.5mm
Shock resistance	Functional: Destructive:	10G min. 100G min.
Ambient temperature	- 40°C + 70°C (with no icing)	
Humidity	45% to 85% RH	
Weight	18g approx.	

Note: The above figures are initial values

Part number description



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 (W, VA)
DC Coil							
HR-CR3□□□□DC06	6	68	88	4.8	0.6	6.6	0.53W Approx.
HR-CR3□□□□DC12	12	273	44	9.6	1.2	13.2	
HR-CR3□□□□DC24	24	1085	22.4	19.2	2.4	26.4	
HR-CR3□□□□DC48	48	4,350	11	38.4	4.8	52.8	
HR-CR3□□□□DC110	100 / 110	22,800	4.8	88	11	121	
AC Coil							
HR-CR3□□□□AC06	6	16	375	4.8	1.8	6.6	2.0 to 2.5VA (60Hz) Approx.
HR-CR3□□□□AC12	12	63	190	9.6	3.6	13.2	
HR-CR3□□□□AC24	24	240	100	19.2	7.2	26.4	
HR-CR3□□□□AC48	48	1,085	44	38.4	14.4	52.8	
HR-CR3□□□□AC110	100 / 110	5,600	18 / 20	80 / 88	30 / 33	110 / 121	
HR-CR3□□□□AC220	200 / 220	21,000	9.5 / 10	160 / 176	60 / 66	220 / 242	
HR-CR3□□□□AC240	220 / 240			176 / 192	66 / 72	242 / 264	

Note: All values in the chart are measured at 23°C

KPX14

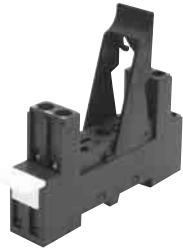
HR-CR3 **NEW**

Sockets

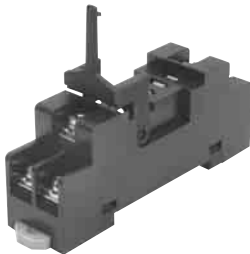
1-POLE



KPX11



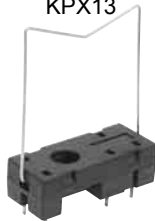
KPX1



KPX12

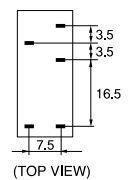
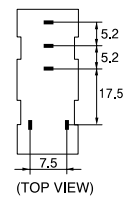
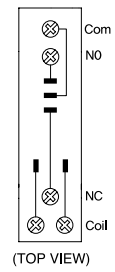
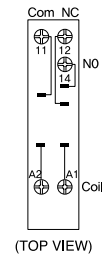
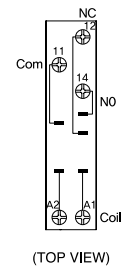
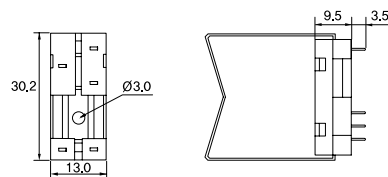
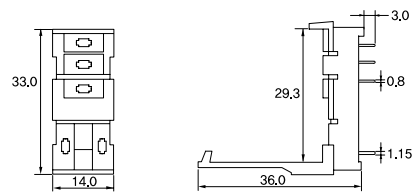
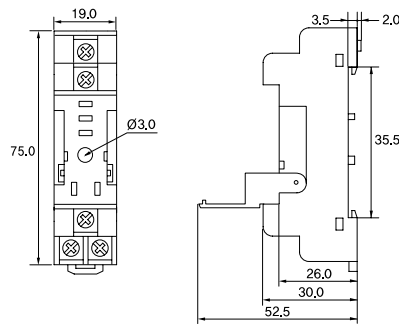
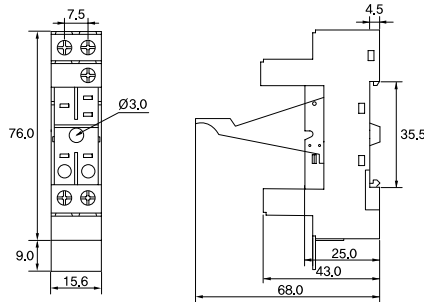
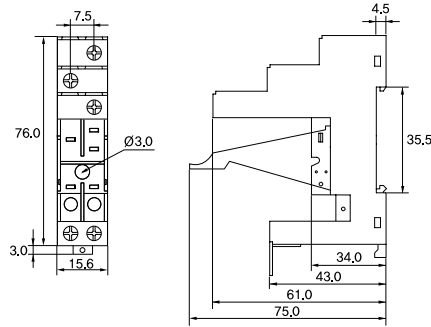


KPX13



KPX14

Dimensions



P.C. BOARD POWER RELAY

HR-CR3 **NEW**

Sockets

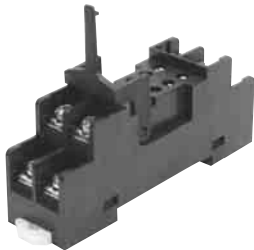
2-POLE



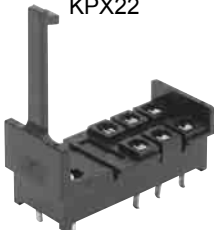
KPX21



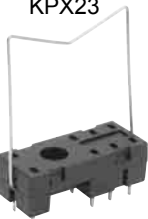
KPX2



KPX22

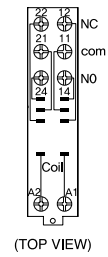
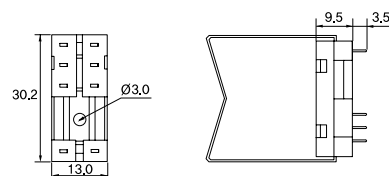
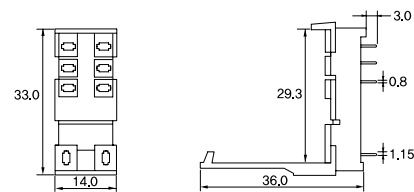
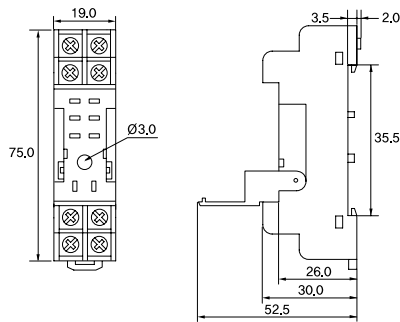
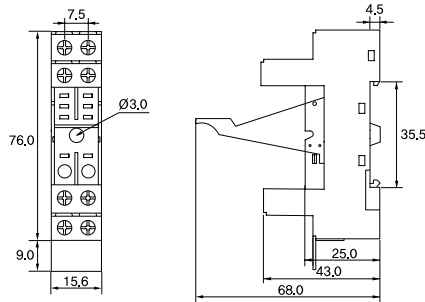
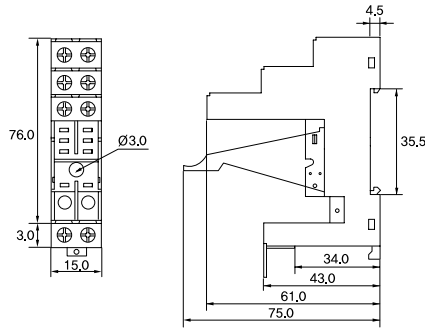


KPX23

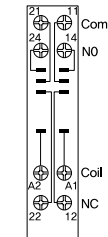


KPX24

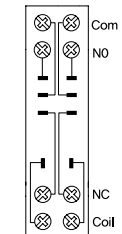
Dimensions



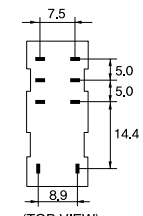
(TOP VIEW)



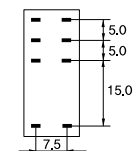
(TOP VIEW)



(TOP VIEW)



(TOP VIEW)



(TOP VIEW)