

# HF2110/HF2120

# MINIATURE HIGH POWER RELAY



File No.:E134517



File No.:CQC10002049166



### Features

- 30A switching capability
- PCB coil terminals, ideal for heavy duty load
- 2.5kV dielectric strength (between coil and contacts)
- Unenclosed type available

### CONTACT DATA

Contact arrangement	1A	1B	1C(NO)	1C(NC)
Contact resistance <sup>1)</sup>	50mΩ max.(at 1A 24VDC)			
Contact material	AgSnO <sub>2</sub> , AgCdO			
Contact rating (Res. load)	30A 240VAC 20A 30VDC	15A 240VAC 10A 30VDC	20A 240VAC 20A 30VDC	10A 240VAC 10A 30VDC
Max. switching power	11080VA 1200W	4511VA 450W	5540VA 600W	2770VA 300W
Max. switching voltage	277VAC / 30VDC			
Max. switching current	40A	15A	20A	10A
Mechanical endurance	1 x 10 <sup>7</sup> OPS			
Electrical endurance	1A type: 1 x 10 <sup>5</sup> OPS (30A 240VAC, Resistive load, AgCdO, Room temp., 1s on 9s off)			

Notes: 1) The data shown above are initial values.

### CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	HF2110/HF2120: 2500VAC 1min HF2111/HF2121: 2000VAC 1min
	Between open contacts	1500VAC 1min
Operate time (at rated. volt.)	15ms max.	
Release time (at rated. volt.)	10ms max.	
Ambient temperature	-55°C to 85°C	
Shock resistance	Functional	98m/s <sup>2</sup>
	Destructive	980m/s <sup>2</sup>
Vibration resistance	10Hz to 55Hz 1mm DA	
Humidity	5% to 85% RH	
Termination	HF2110/2111: PCB HF2120/2121: PCB & QC	
Unit weight	Approx. 25g	
Construction	Unenclosed	

Notes: 1) The data shown above are initial values.

2) Please find coil temperature curve in the characteristic curves below.

3) UL insulation system: Class F, Class B.

### COIL

Coil power	Approx. 900mW
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### COIL DATA

at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC max.1)	Drop-out Voltage VDC min.1)	Max. Voltage VDC*2)	Coil Resistance Ω
5	3.75	0.5	6.5	27 x (1±10%)
6	4.50	0.6	7.8	40 x (1±10%)
9	6.75	0.9	11.7	97 x (1±10%)
12	9.00	1.2	15.6	155 x (1±10%)
15	11.25	1.5	19.5	256 x (1±10%)
18	13.50	1.8	23.4	380 x (1±10%)
24	18.00	2.4	31.2	660 x (1±10%)
48	36.00	4.8	62.4	2560 x (1±10%)
70	52.50	7.0	91.0	5500 x (1±10%)
110	82.50	11.0	143.0	13450 x (1±10%)

Notes: 1) The data shown above are initial values.

2)\*Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.



HONGFA RELAY

ISO9001, ISO/TS16949, ISO14001, OHSAS18001, IECQ QC 080000 CERTIFIED

2019 Rev. 1.00

## SAFETY APPROVAL RATINGS

### UL/CUL

Load type	Volts	1 Form A	1 Form B	1 Form C (NO)	1 Form C (NC)
General purpose	125/240VAC	30A	15A	30A	15A
	277VAC	30A	30A	30A	30A
Resistive	125/240VAC	30A	15A	--	--
	30VDC	20A	10A	20A	10A
	277VAC	20A	--	--	--
	240VAC	15A	--	--	--
	250VAC	40A	--	40A	--
Ballast	125/240/277VAC	6A	3A	6A	3A
Pilot duty	125VAC	800VA	290VA	800VA	290VA
	125VAC	690VA	--	690VA	--
	125VAC	800VA	--	800VA	--
	240VAC	1152VA	768VA	1152VA	768VA
	277VAC	764VA	--	764VA	--
Motor load	125VAC	1HP	1/4HP	1HP	1/4HP
	240VAC	2HP	1HP	2HP	1HP
	125VAC	1HP	--	1HP	--
	125/277VAC	3/4HP	--	3/4HP	--
Definite purpose (LRA-loaded rotor) (FLA-full load)	120VAC	82.8LRA, 13.8FLA	--	82.8LRA, 13.8FLA	--
	125VAC	96LRA, 30FLA	33LRA, 10FLA	60LRA, 20FLA	33LRA, 10FLA
	125VAC	60LRA, 20FLA	30LRA, 12FLA	60LRA, 20FLA	30LRA, 12FLA
	125VAC	82.8LRA, 27FLA	--	82.8LRA, 27FLA	--
	240VAC	80LRA, 30FLA	33LRA, 10FLA	60LRA, 20FLA	33LRA, 10FLA
	240VAC	41.4LRA, 6.9FLA	--	41.4LRA, 6.9FLA	--
Tungsten	277VAC	60LRA, 20FLA	--	60LRA, 20FLA	--
	125VAC	15A	--	15A	--
	240VAC	5A	--	5A	3A
	120VAC	--	3A	--	--
	240VAC	--	3A	--	--

**Notes:** 1) All values unspecified are at room temperature.  
 2) Only typical loads are listed above. Other load specifications can be available upon request.

## ORDERING INFORMATION

<b>Type</b>	<b>HF2110</b> <b>HF2120</b>	<b>-1A</b>	<b>-12D</b>	<b>T</b>	<b>F</b>	<b>(XXX)</b>
<b>Contact arrangement</b>	<b>1A:</b> 1 Form A <b>1B:</b> 1 Form B <b>1C:</b> 1 Form C					
<b>Coil voltage</b>	5, 6, 9, 12, 15, 18, 24, 48, 70, 110VDC					
<b>Contact material</b>	<b>T:</b> AgSnO <sub>2</sub> <b>Nil:</b> AgCdO					
<b>Insulation standard</b>	<b>F:</b> Class F <b>Nil:</b> Class B					
<b>Special code<sup>5)</sup></b>	<b>XXX:</b> Customer special requirement		<b>Nil:</b> Standard			

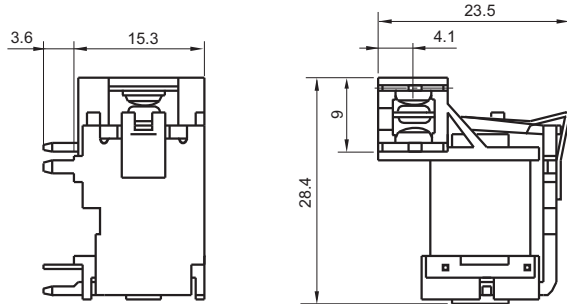
**Notes:** 1) To avoid using relays under strong magnetic field which will change the parameters of relays such as pick-up voltage and drop-out voltage.  
 2) Relays may be damaged because of falling or when shocking conditions exceed the requirement.  
 3) About preferable condition of operation, storage and transportation, please refer to "Explanation to terminology and guidelines of relay".  
 4) For unenclosed type, because there is no cover protection, the products may be contaminated by particles during transportation assembly or usage, which may cause relay failure, so the products should be effectively protected at customer side, Hongfa suggest to use HF2150/HF2160 type, if no other special requirement.  
 5) The customer special requirement express as special code after evaluating by Hongfa.

# OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

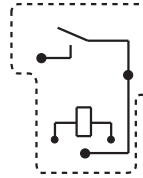
Unit: mm

## 1 Form A

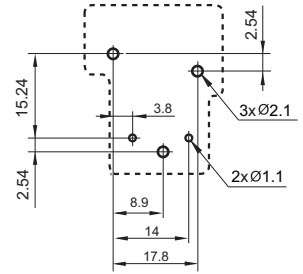
HF2111 Outline Dimensions



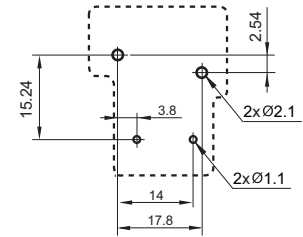
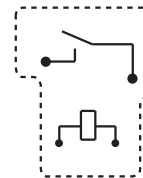
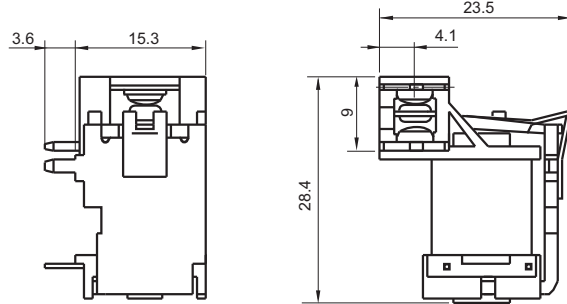
Wiring Diagram (Bottom view)



PCB Layout (Bottom view)

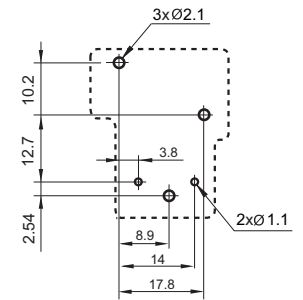
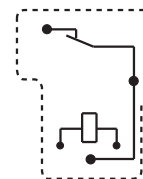
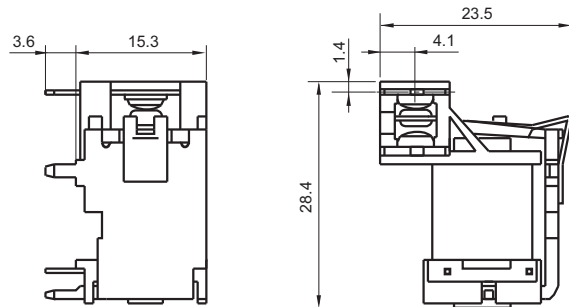


HF2110

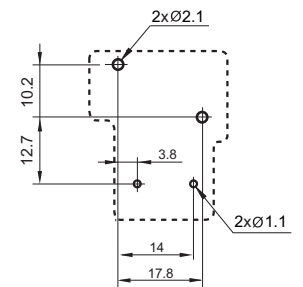
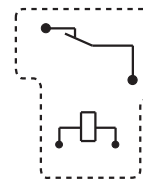
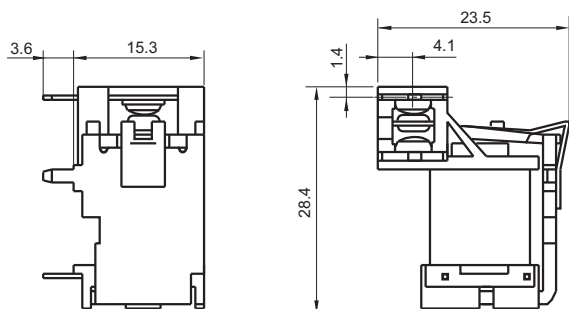


## 1 Form B

HF2111



HF2110



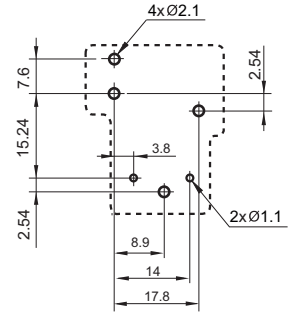
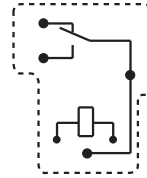
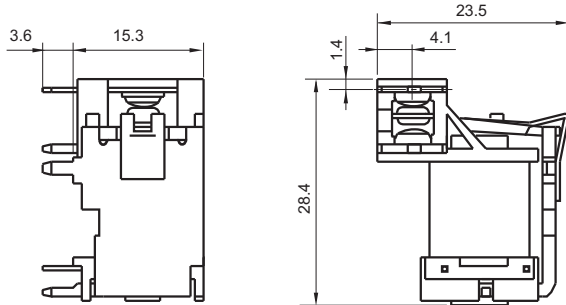
1 Form C

Outline Dimensions

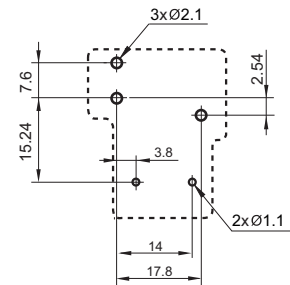
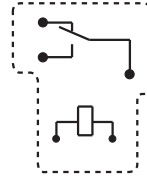
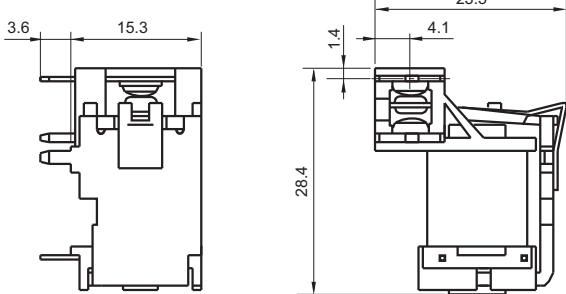
Wiring Diagram  
(Bottom view)

PCB Layout  
(Bottom view)

HF2111

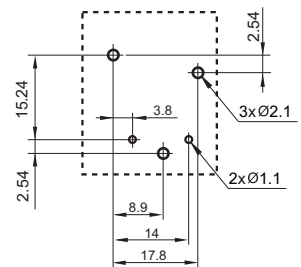
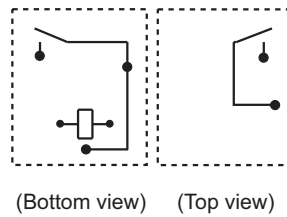
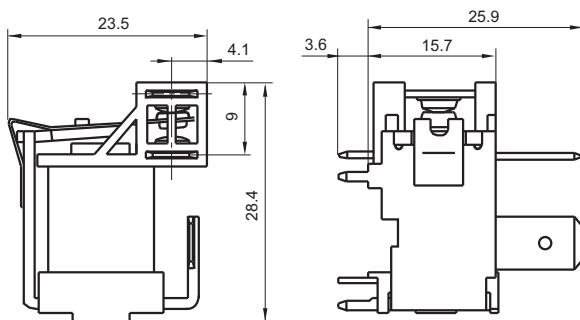


HF2110

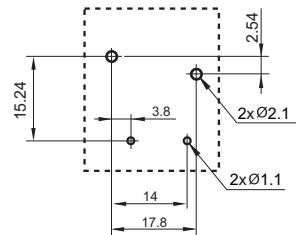
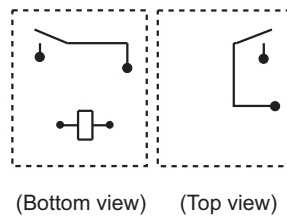
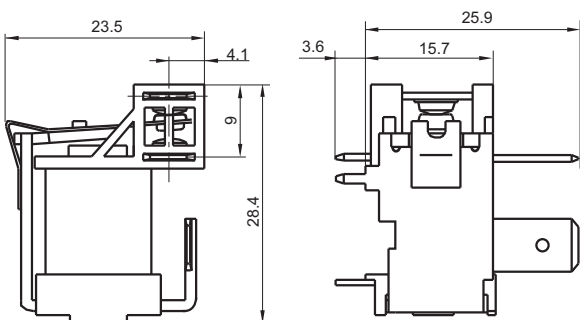


1 Form A

HF2121



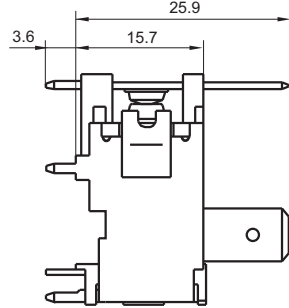
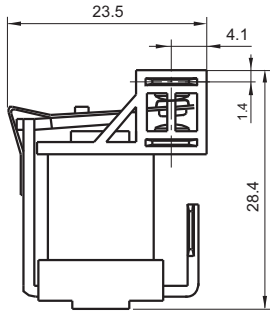
HF2120



1 Form B

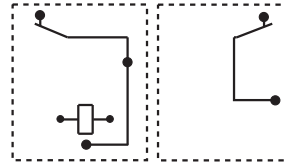
Outline Dimensions

HF2121



Wiring Diagram

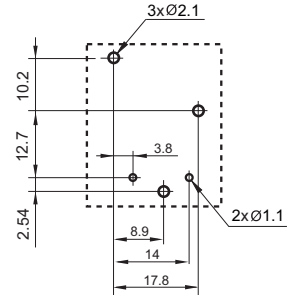
(Bottom view)



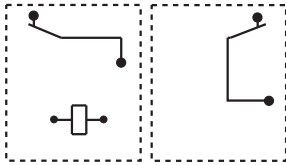
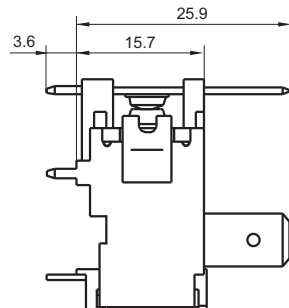
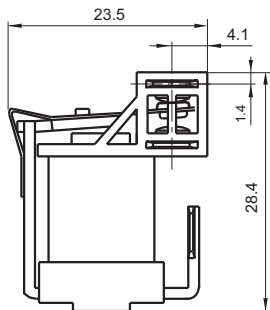
(Bottom view) (Top view)

PCB Layout

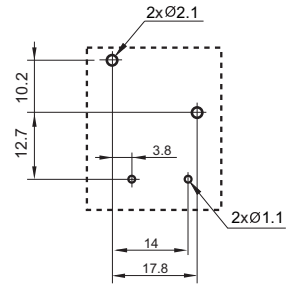
(Bottom view)



HF2120

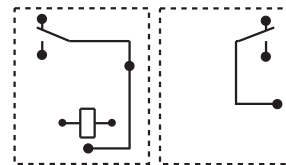
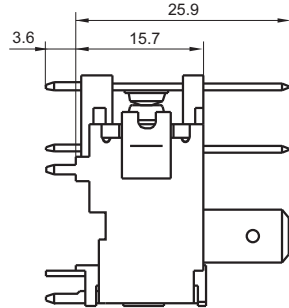
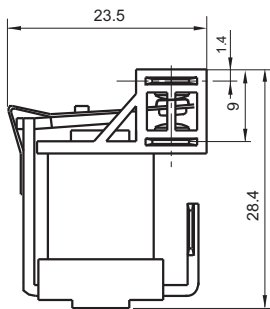


(Bottom view) (Top view)

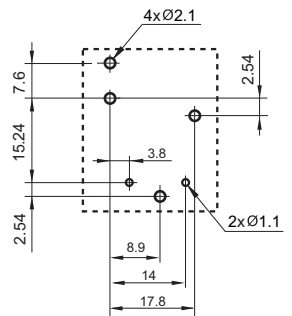


1 Form C

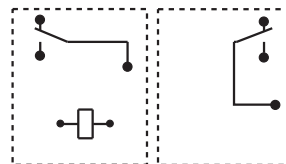
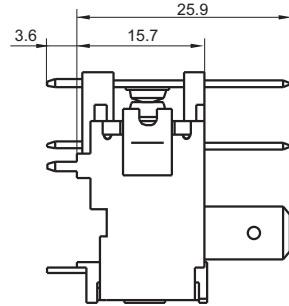
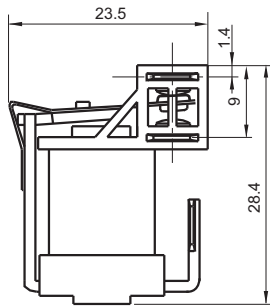
HF2121



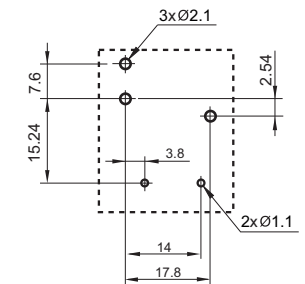
(Bottom view) (Top view)



HF2120



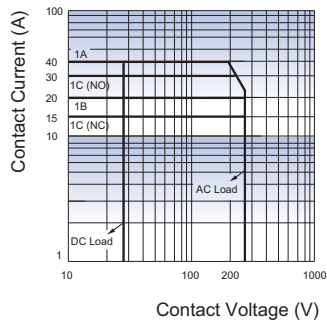
(Bottom view) (Top view)



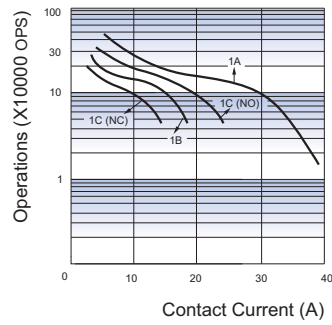
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should be  $\pm 0.4\text{mm}$ .  
 2) The tolerance without indicating for PCB layout is always  $\pm 0.1\text{mm}$ .

## CHARACTERISTIC CURVES

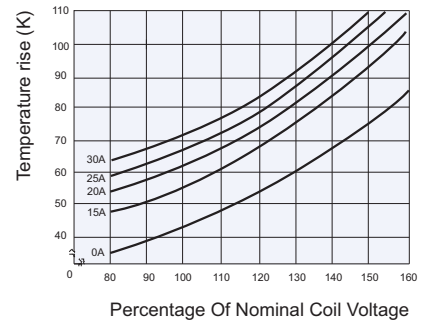
MAXIMUM SWITCHING POWER



ENDURANCE CURVE



COIL TEMPERATURE RISE



**Test conditions:**

Resistive load, AgCdO, Room temp.,  
1s on 9s off.

**Disclaimer**

The specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications subject to change without notice. We could not evaluate all the performance and all the parameters for every possible application. Thus the user should be in a right position to choose the suitable product for their own application. If there is any query, please contact Hongfa for the technical service. However, it is the user's responsibility to determine which product should be used only.

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