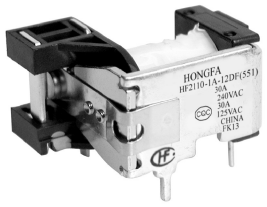
HF2110/HF2120 MINIATURE HIGH POWER RELAY

c UL us
File No.:E134517

CQC
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

RoHS compliant

CONTACT DATA

Contact arrangement	1A	1B	1C(NO)	1C(NC)
Contact resistance 1)	50mΩ max.(at 1A 24VDC)			
Contact material	$AgSnO_2$, 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	1×10^7 OPS			
Electrical endurance	1A type: 1×10^5 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/s²
	Destructive	980m/s²
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

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.

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	– –
	277VAC	60LRA, 20FLA	– –	60LRA, 20FLA	– –
Tungsten	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

	HF2110 HF2120	-1A	-12D	T	F	(XXX)

Type HF2110 / HF2120

Contact arrangement **1A:** 1 Form A **1B:** 1 Form B **1C:** 1 Form C

Coil voltage 5, 6, 9, 12, 15, 18, 24, 48, 70, 110VDC

Contact material **T:** $AgSnO_2$ **Nil:** AgCdO

Insulation standard **F:** Class F **Nil:** Class B

Special code[5] **XXX:** Customer special requirement **Nil:** 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 guidetines of relay".
4) For unenclosed type, beaucause there is no cover protection, the products may be contaminate by particles during transportation assembly or usage, which may cause relay failure, so the produces 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.

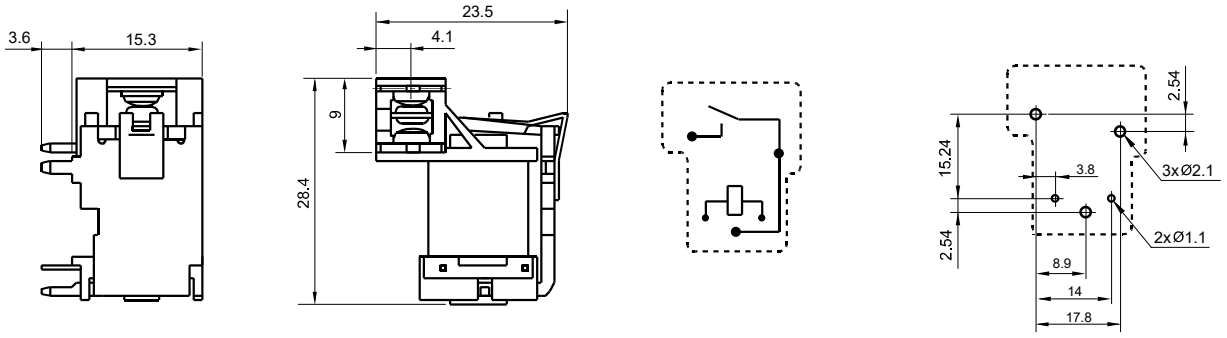
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

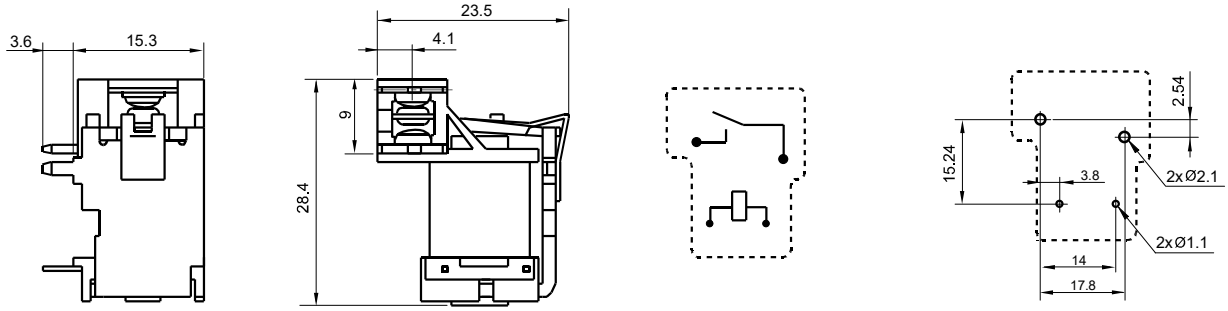
1 Form A

Outline Dimensions | Wiring Diagram (Bottom view) | PCB Layout (Bottom view)

HF2111

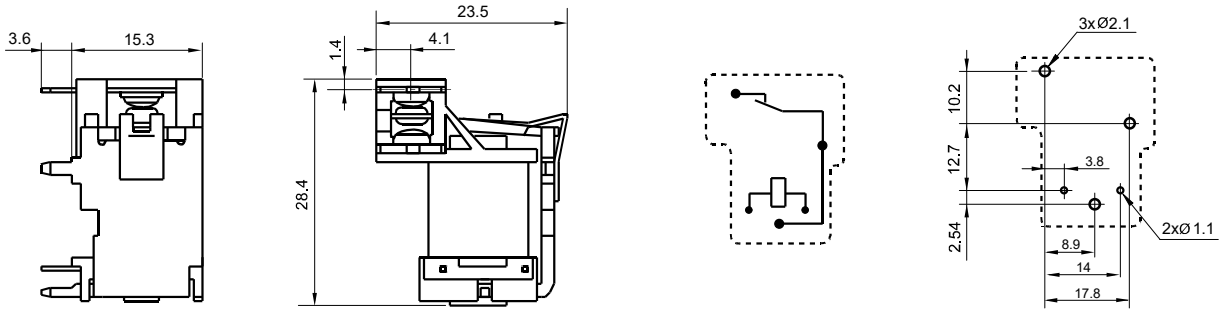


HF2110

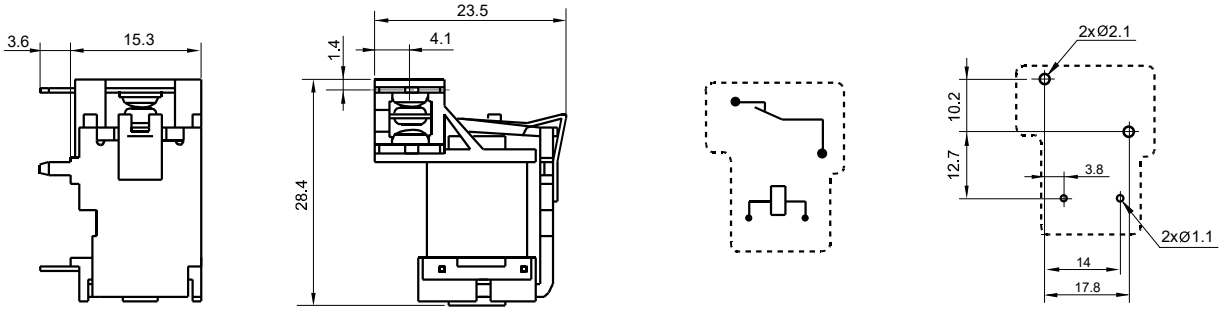


1 Form B

HF2111



HF2110



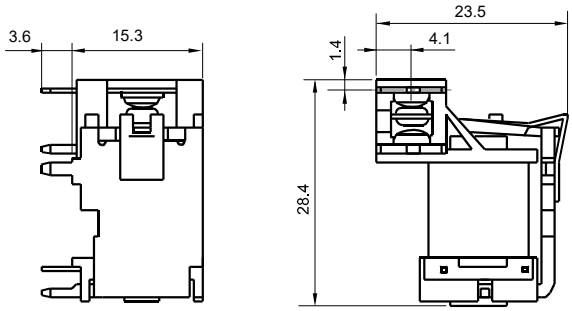
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

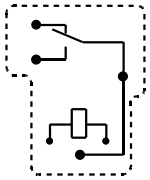
Unit: mm

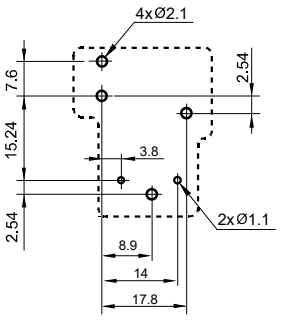
1 Form C

Outline Dimensions | Wiring Diagram (Bottom view) | PCB Layout (Bottom view)

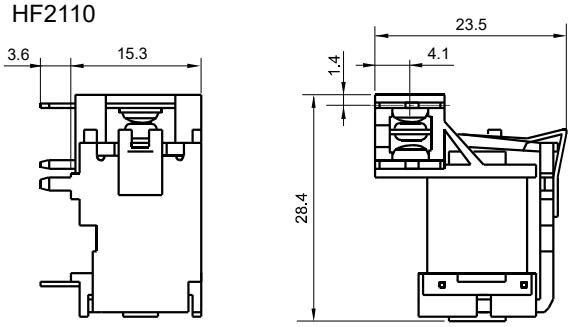
HF2111

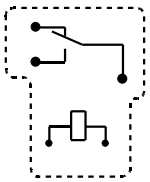


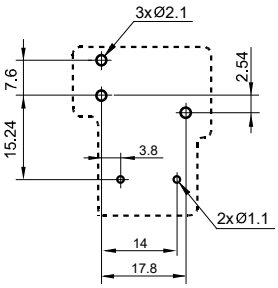




HF2110

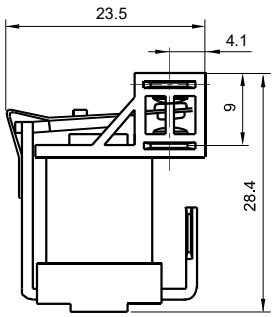


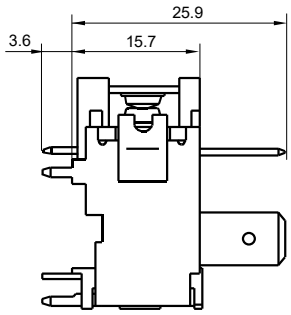


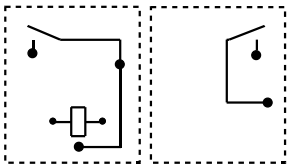


1 Form A

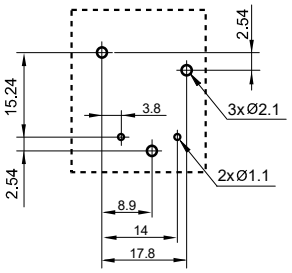
HF2121



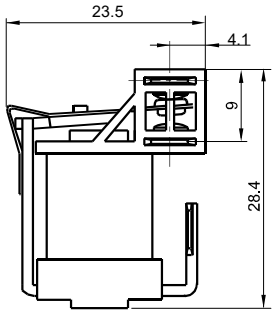


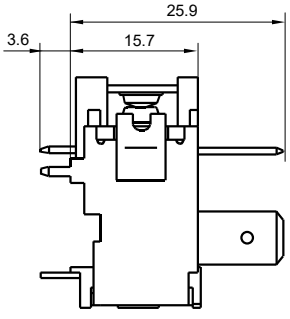


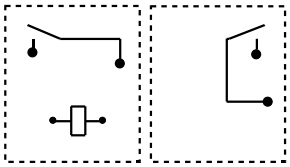
(Bottom view) (Top view)



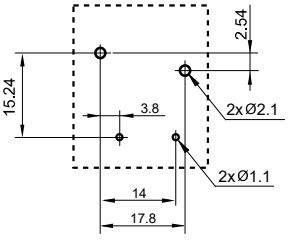
HF2120







(Bottom view) (Top view)



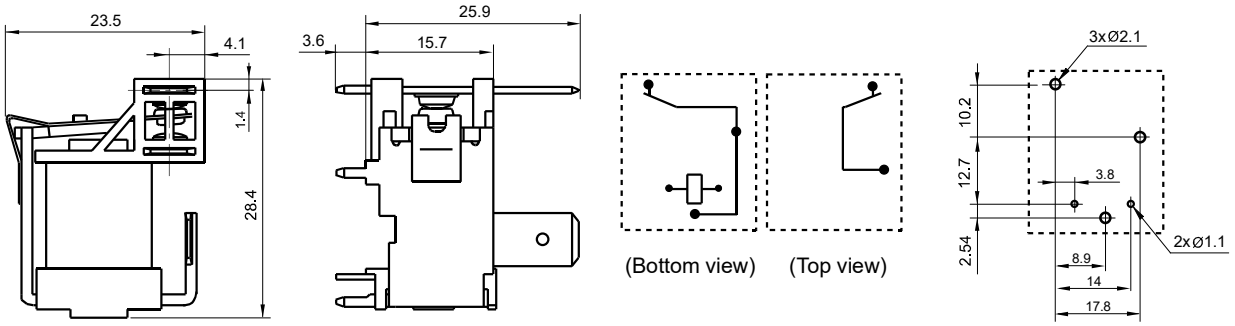
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

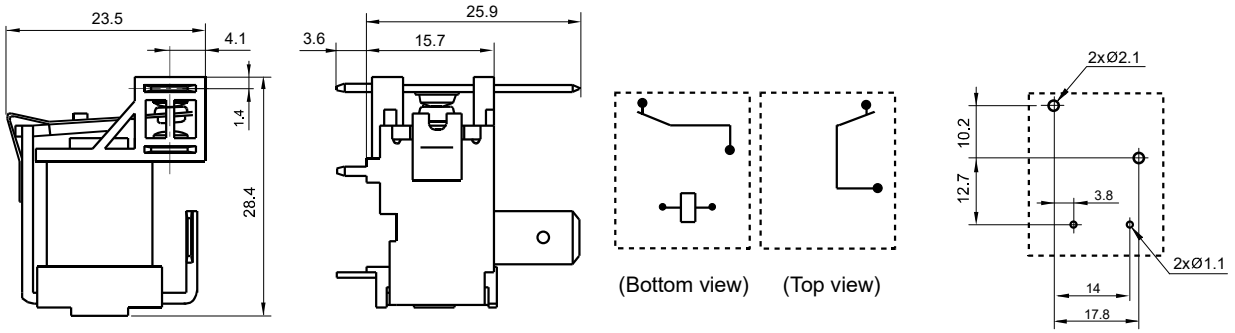
1 Form B

Outline Dimensions | Wiring Diagram (Bottom view) | PCB Layout (Bottom view)

HF2121

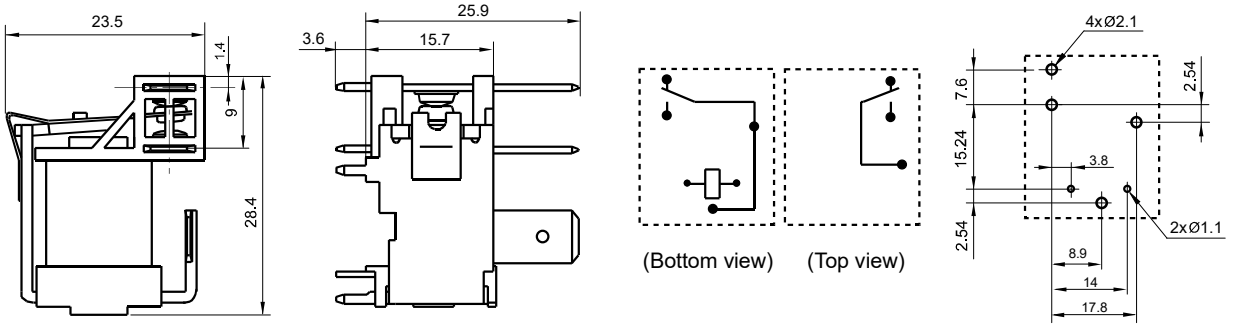


HF2120

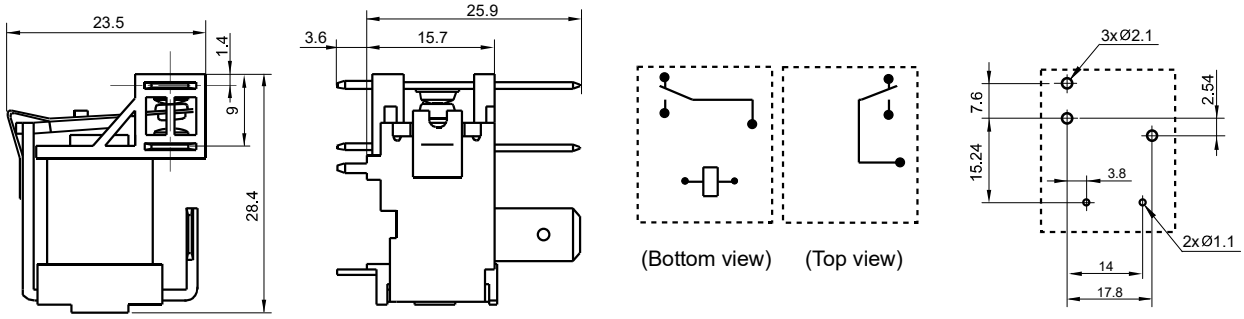


1 Form C

HF2121



HF2120

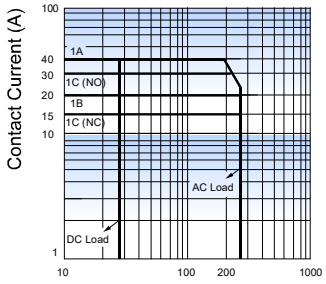


Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.

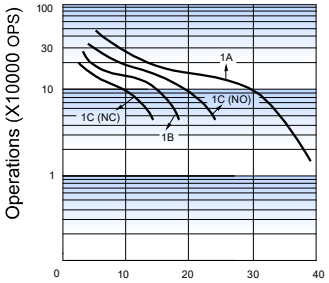
2) The tolerance without indicating for PCB layout is always ±0.1mm.

CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER



ENDURANCE CURVE



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

COIL TEMPERATURE RISE