HF116F-1 MINIATURE HIGH POWER RELAY

c UL us
File No.:E134517

File No.:R 50154722

CQC
File No.:CQC09002031231
CQC18002206328

Features

- 30A switching capability
- 4kV dielectric strength (between coil and contacts)
- 3mm contact gap available

RoHS compliant

CONTACT DATA

Contact arrangement	1A	2A
Contact resistance[1)]	100mΩ max.(at 1A 24VDC)	
Contact material	$AgSnO_2$, AgCdO	
Contact rating (Res. load)	30A 240VAC 30A 277VAC	25A 240VAC 25A 277VAC
Max. switching voltage	277VAC	
Max. switching current	30A	25A
Max. switching power	8310VA	6925VA
Mechanical endurance	1 x 10^7OPS	
Electrical endurance	1H,1HT type: 1 x 10^5OPS (30A 240VAC, Resistive load, Room temp., 1s on 9s off) 2H,2HT type: 1 x 10^5OPS (25A 240VAC, Resistive load, 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	4000VAC 1min
	Between open contacts	2000VAC 1min
Operate time (at nomi. volt.)		30ms max.(DC type)
Release time (at nomi. volt.)		30ms max.(DC type)
Shock resistance	Functional	Standard:98m/s² Pulse width 11ms W type:98m/s² Pulse width 6ms
	Destructive	980m/s² Pulse width 6ms
Vibration resistance		Standard:10H to 55Hz 1.5mm DA W type:10H to 55Hz 1.0mm DA
Ambient temperature		-55˚C to 70˚C
Humidity		5% to 85% RH
Termination		PCB, QC, Screw
Unit weight		Approx. 120g
Construction		Dust protected

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	DC type: Approx. 1.9W; AC type: Approx. 2.7VA

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
3	2.25	0.3	3.3	4.7 x (1±10%)
6	4.50	0.6	6.6	18.8 x (1±10%)
12	9.00	1.2	13.2	75 x (1±10%)
24	18.0	2.4	26.4	300 x (1±10%)
48	36.0	4.8	52.8	1200 x (1±10%)
100	75.0	10.0	110	5200 x (1±10%)
110	82.5	11.0	121	6300 x (1±10%)
200	150	20.0	220	21000 x (1±10%)

Nominal Voltage VAC	Pick-up Voltage VAC[1)]	Drop-out Voltage VAC[1)]	Max. Voltage VAC *[2)]	Coil Resistance Ω
6	4.80	0.90	6.6	18.8 x (1±10%)
12	9.60	1.80	13.2	75 x (1±10%)
24	19.2	3.60	26.4	300 x (1±10%)
48	38.4	7.20	52.8	1200 x (1±10%)
120	96.0	18.0	132	5200 x (1±10%)
220/240	176	33.0	242	20800 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	$AgSnO_2$	30A 277VAC 1.5HP 120VAC 3HP 240VAC 10A 120VAC Tungsten
	AgCdO	30A 277VAC 1.5HP 120VAC 3HP 240VAC 10A 120VAC Tungsten TV-10 120VAC
TÜV		27A 240VAC COSØ =0.8 25A 240VAC COSØ =0.4 25A 240VAC COSØ =1

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

	HF116F-1 /	012	D	A	-1H	T	F	W	C	(XXX)
Type										
Coil voltage	**DC:** 3VDC to 200VDC **AC:** 6VAC to 220VAC									
Coil voltage form	**D:** DC	**A:** AC								
Mounting	**A:** Mount	**P:** PCB	**F:** Flanged							
Contact arrangement	**1H:**1 Form A	**2H:** 2 Form A								
Contact material	**T:** $AgSnO_2$	**Nil:** AgCdO								
Insulation standard	**F:** Class F	**Nil:** Class B								
Contact Gap	**W:** 3.0mm	**Nil:** Standard								
Capacitor	**C:** With Capacitor(Only for AC)	**Nil:** Without Capacitor								
Special code[3]	**XXX:** Customer special requirement	**Nil:** Standard								

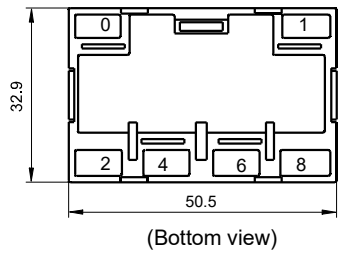
Notes: 1) Water cleaning or surface process is not suggested after the dust-protected relays are assembled on PCB.
2) Dust-protected relays can not be used in the environment with pollutants like H_2S, SO_2, NO_2, dust, etc.
3) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

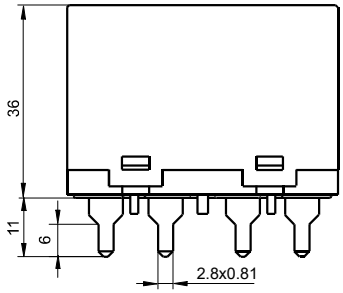
Unit: mm

Outline Dimensions

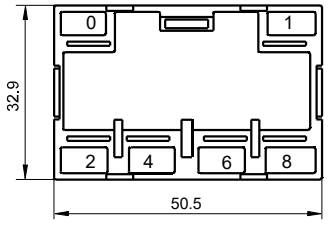
HF116F-1/□□□ -□-P-1H-□



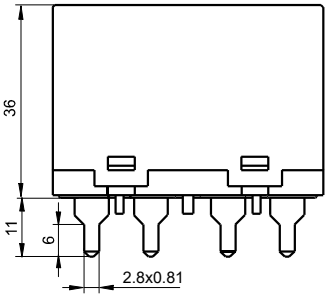
(Bottom view)



HF116F-1/□□□ -□-P-2H-□

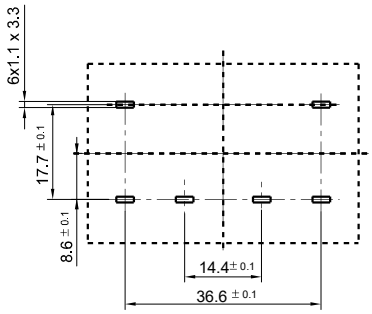


(Bottom view)



PCB Layout

(Bottom view)

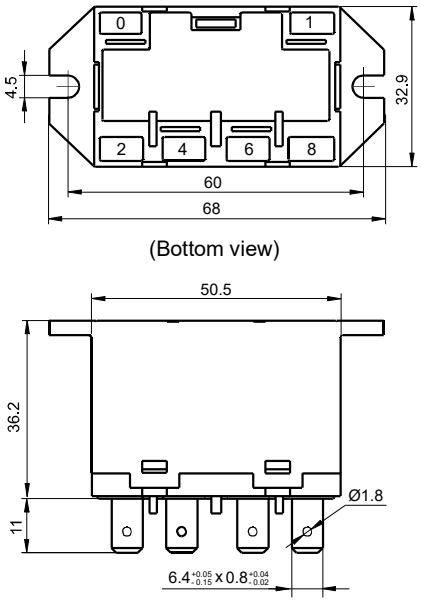


OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

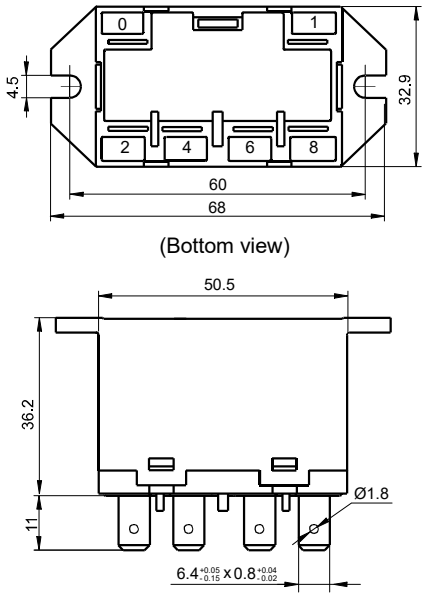
Unit: mm

Outline Dimensions

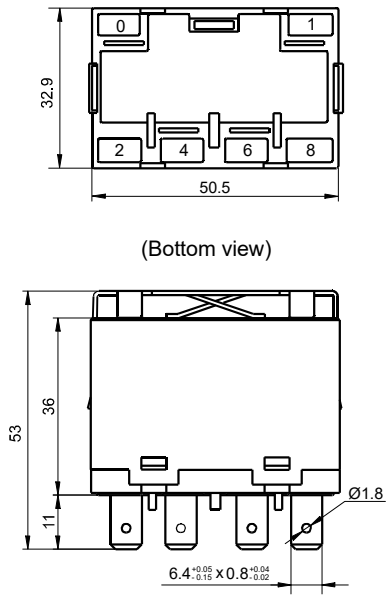
HF116F-1/□□□ -□ -F-1H-□



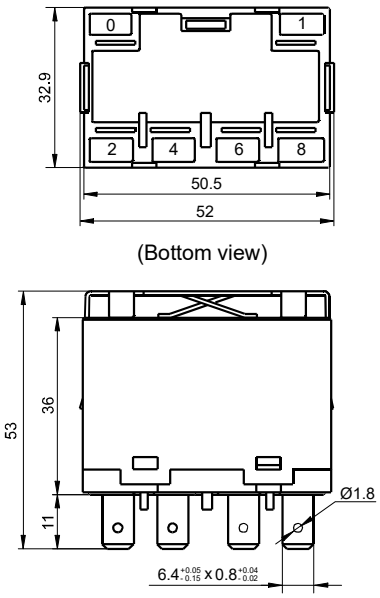
HF116F-1/□□□ -□ -F-2H-□



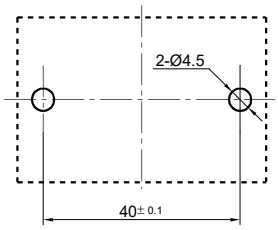
HF116F-1/□□□ -□ -A-1H-□



HF116F-1/□□□ -□ -A-2H-□



Mounting Holes



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.

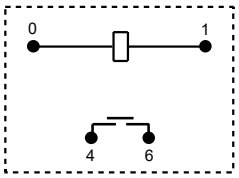
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

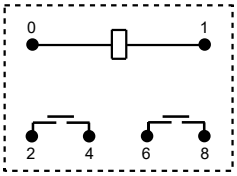
Wiring Diagram

(Bottom view)

1 Form A

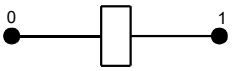


2 Form A

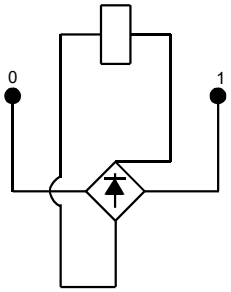


Coil Inner Circuit

DC operation coil

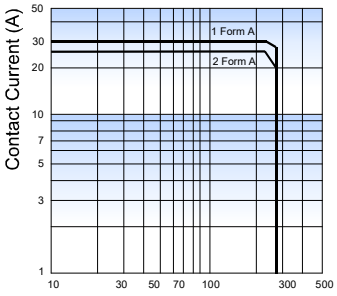


AC operation coil



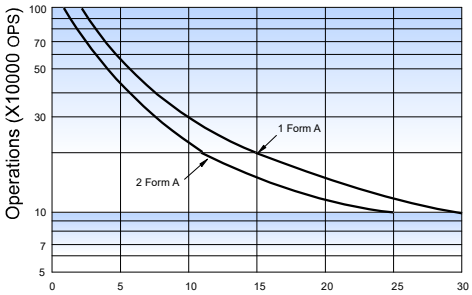
CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER



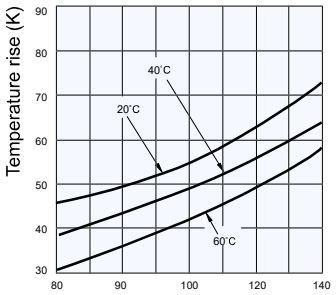
Contact Voltage (V)

ENDURANCE CURVE



Contact Current (A)

COIL TEMPERATURE RISE



Percentage Of Nominal Coil Voltage

Test conditions:

250VAC, Resistive load, 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.