HF116F-2 MINIATURE HIGH POWER RELAY

File No.:E134517

File No.:R 50154722

File No.:CQC09002031231
CQC18002206328

Features

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

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. vot.)		30ms max.(DC type)
Release time (at nomi. vot.)		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		Plastic sealed, Flux proofed

Notes: 1) The data shown above are initial values.
2) Please find coil temperature curve in the characteristic curves below.
3) For the plastic sealed type, please open two vent holes after installing relay (or cleansing PCB board) in order to increase the relay reliability.
4) 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 max.1)	Drop-out Voltage VAC min.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-2 /	012	D	L	-1H	S	T	F	W	(XXX)		

Type		
Coil voltage	**DC:** 3VDC to 200VDC **AC:** 6VAC to 220VAC	
Coil input	**D:** DC	**A:** AC
Mounting	**P:** PCB	**L:** Screw
Contact arrangement	**1H:** 1 Form A	**2H:** 2 Form A
Construction[1)2)]	**S:** Plastic sealed	**Nil:** Flux proofed
Contact material[3)]	**T:** $AgSnO_2$	**Nil:** AgCdO
Insulation standard	**F:** Class F	**Nil:** Class B
Contact Gap	**W:** 3.0mm	**Nil:** Standard
Special code[4)]	**XXX:** Customer special requirement	**Nil:** Standard

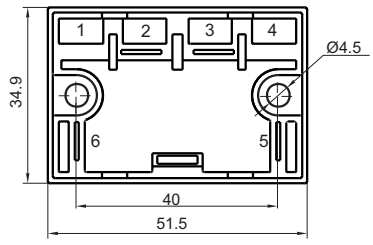
Notes: 1) We recommend flux proofed types for a clean environment (free from contaminations like H_2S, SO_2, NO_2, dust, etc.).
We suggest to choose plastic sealed types and validate it in real application for an unclean environment (with contaminations like H_2S, SO_2, NO_2, dust, etc).
2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.
3) For the applications of motor load, capacitive load and high inrush current, $AgSnO_2$ contact material is recommended. For the applications of resistive load or low inductive load, AgCdO contact material is recommened.
4) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

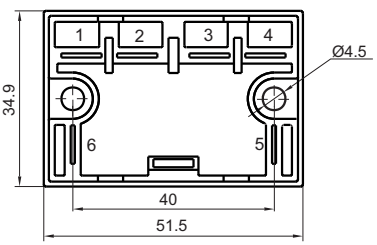
Outline Dimensions

HF116F-2/□□□ -□ -L-1H-□



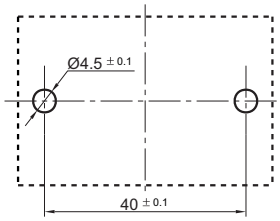
(Bottom view)

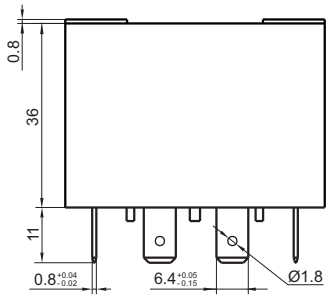
HF116F-2/□□□ -□ -L-2H-□

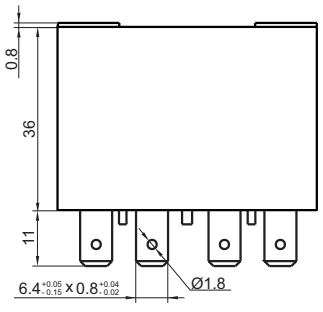


(Bottom view)

Mounting Holes





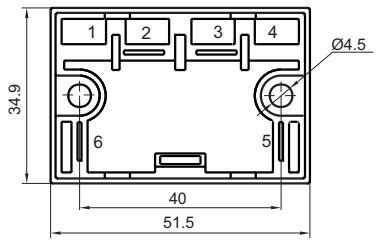


OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

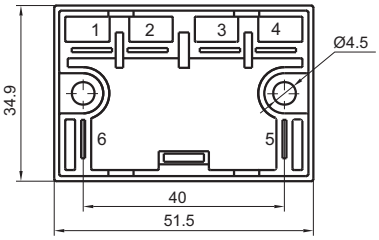
Outline Dimensions

HF116F-2/□□□ -□ -P-1H-□

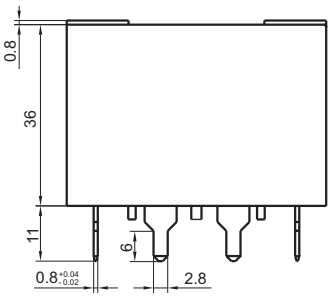


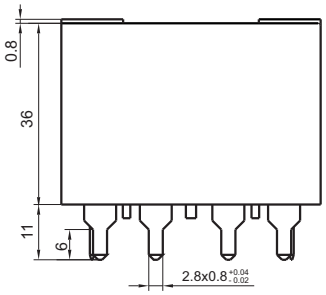
(Bottom view)

HF116F-2/□□□ -□ -P-2H-□



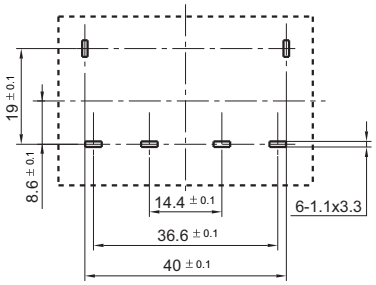
(Bottom view)





PCB Layout

(Bottom view)



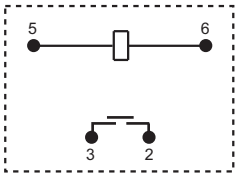
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.

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

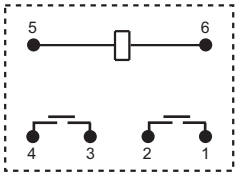
Wiring Diagram

(Bottom view)

1 Form A

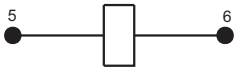


2 Form A

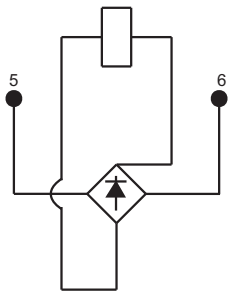


Coil Inner Circuit

DC operation coil

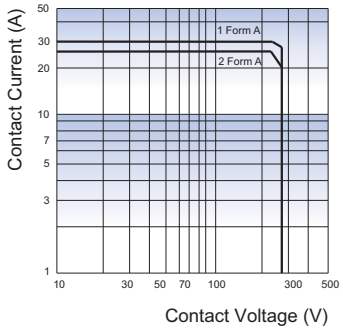


AC operation coil

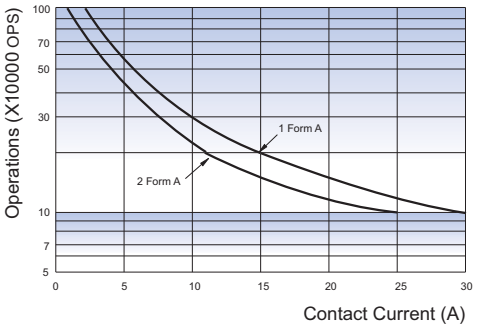


CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER



ENDURANCE CURVE



Test conditions:
250VAC, Resistive load, Flux proofed,
Room temp., 1s on 9s off

COIL TEMPERATURE RISE