HF116F-3 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. 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 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-3 /	012	D	F	-1H	T	F	W	C	(XXX)
Type										
Coil voltage	**DC:** 3VDC to 200VDC **AC:** 6VAC to 240VAC									
Coil voltage form	**D:** DC	**A:** AC								
Mouting	**A:** Mount	**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								

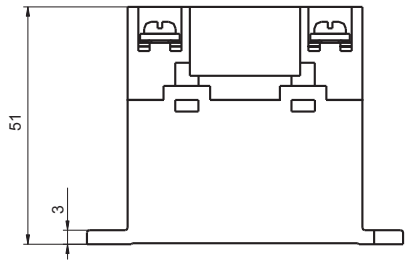
Notes: 1) Water cleaning or surface process is not suggested after the dust-protected relays are assembled on PCB.
2) dust-protected relays can not be used in the environment with pollutants like H_2S, SO_2, NO_2, dust, etc.
3) The customer special requirement express as special code after evaluating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

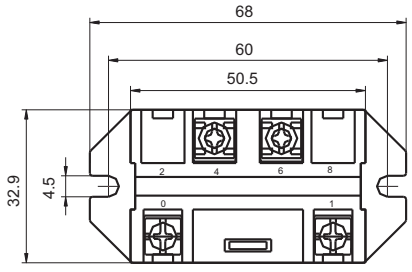
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Outline Dimensions

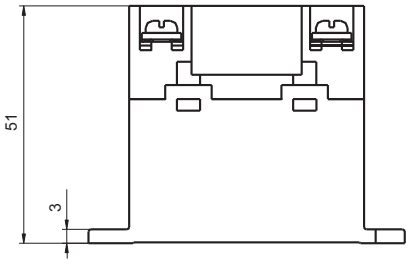
HF116F-3/□□□□-F-1H

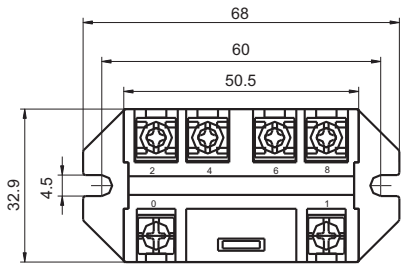




(Bottom view)

HF116F-3/□□□□-F-2H





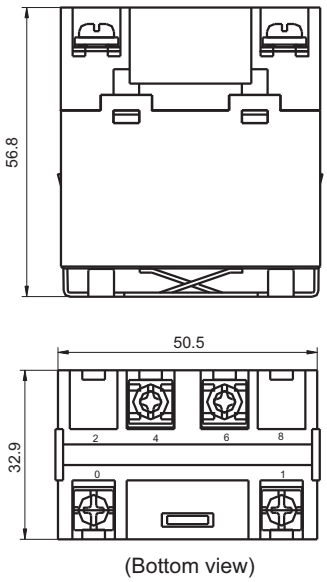
(Bottom view)

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

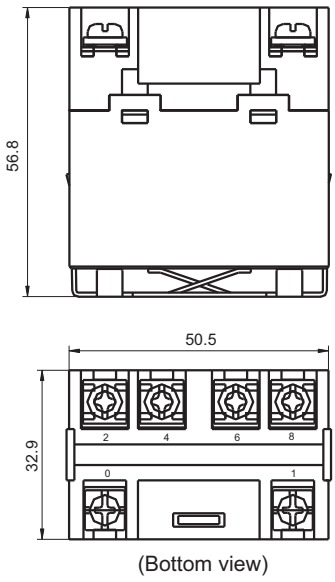
Outline Dimensions

HF116F-3/□□□□-A-1H



(Bottom view)

HF116F-3/□□□□-A-2H



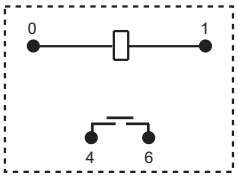
(Bottom view)

Remark: 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.

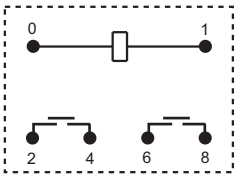
Wiring Diagram

(Bottom view)

1 Form A

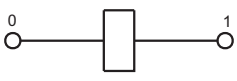


2 Form A

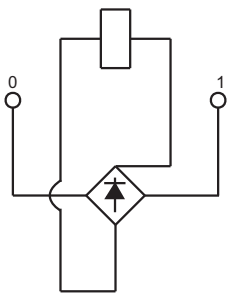


Coil Inner Circuit

DC operation coil

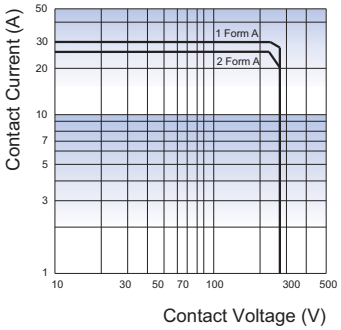


AC operation coil

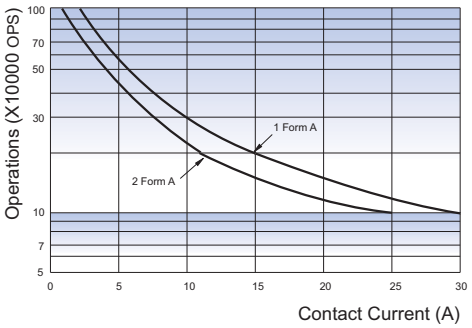


CHARACTERISTIC CURVES

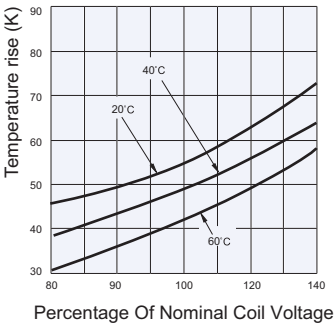
MAXIMUM SWITCHING POWER



ENDURANCE CURVE



COIL TEMPERATURE RISE



Test conditions:

250VAC, Resistive load,
Room temp., 1s on 9s off