

# HF116F-1(JQX-116F-1)

# MINIATURE HIGH POWER RELAY



File No.:E134517



File No.:R50031086



File No.:CQC02001001945



## Features

- 30 A switching capability
- 4kV dielectric strength (between coil and contacts)
- Heavy load up to 7500VA
- Class F insulation available
- 3mm contact gap available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (50.5 x 33.5 x 36.0) mm

## CONTACT DATA

Contact arrangement	1A	2A
Contact resistance	100mΩ (at 1A 24VDC)	
Contact material	AgSnO <sub>2</sub> , AgCdO	
Contact rating (Res. load)	30A 250VAC 30A 28VDC	25A 250VAC 25A 28VDC
Max. switching voltage	277VAC / 28VDC	
Max. switching current	30A	25A
Max. switching power	7500VA/840W	6250VA/700W
Mechanical endurance	1 x 10 <sup>7</sup> OPS	
Electrical endurance	1 x 10 <sup>5</sup> OPS	

## 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.	
Release time (at nomi. volt.)	30ms max.	
Shock resistance	Functional	100m/s <sup>2</sup> (10g)
	Destructive	1000m/s <sup>2</sup> (100g)
Vibration resistance	10Hz to 55Hz 1.5mm DA	
Ambient temperature	-55°C to 70°C	
Humidity	98% RH, 40°C	
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) For the wash tight type, please open two vent holes after installing relay (or cleansing PCB board) in order to increase the relay reliability.

## COIL

Coil power	DC type: 1.9W; AC type: 2.7VA
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## COIL DATA

at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max. Allowable Voltage VDC	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	12.0	121	6300 x (1±10%)
200	150	20.0	220	21000 x (1±10%)

Nominal Voltage VAC	Pick-up Voltage VAC	Drop-out Voltage VAC	Max. Allowable Voltage VAC	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	176	33.0	242	20800 x (1±10%)

## SAFETY APPROVAL RATINGS

UL&CUR	AgSnO <sub>2</sub>	30A 277VAC 1.5HP 120VAC 3HP 240VAC 10A 120VAC
	AgCdO	30A 277VAC 1.5HP 120VAC 3HP 240VAC 10A 120VAC Tungsten TV-10 120VAC
TÜV		27A 240VAC COSφ = 0.8 25A 240VAC COSφ = 0.4 25A 240VAC COSφ = 1

**Notes:** Only some typical ratings are listed above. If more details are required, please contact us.



HONGFA RELAY

ISO9001、ISO/TS16949、ISO14001、OHSAS18001 CERTIFIED

2007 Rev. 2.00

## ORDERING INFORMATION

<b>HF116F-1 / 018 D A -1H T F W C (XXX)</b>	
<b>Type</b> <sup>1)</sup>	HF116F-1 JQX-116F-1 (Old type)
<b>Coil voltage</b>	<b>DC:</b> 3 to 200VDC <b>AC:</b> 6 to 220VAC
<b>Coil voltage form</b>	<b>D:</b> DC <b>A:</b> AC
<b>Mounting</b>	<b>A:</b> Mount <b>P:</b> PCB <b>F:</b> Flanged
<b>Contact arrangement</b>	<b>1H:</b> 1 Form A <b>2H:</b> 2 Form A
<b>Contact material</b> <sup>2)</sup>	<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>Contact Gap</b>	<b>W:</b> 3.0mm <b>Nil:</b> Standard
<b>Capacitor</b>	<b>C:</b> With Capacitor( for AC only) <b>Nil:</b> Without Capacitor
<b>Customer special code</b> <sup>3)</sup> (Only for special requirements)	e.g. (551) stands for RoHS compliant (Cadmium containing contacts) (555) stands for RoHS compliant (Cadmium-free contacts)

**Notes:** 1) We have now gradually updated our ordering information. We suggest new type should be selected. If necessary, old type can be kept for some period for the old customers.

2) For the application of motor load, capacitive load and the like high inrush current, AgSnO<sub>2</sub> contact material is recommended. For the application of resistive load, inductive load, AgCdO contact material is recommended on the priority.

3) HF116F-2 is an environmental friendly product. Please mark a special code (555) or (551) when ordering. (551) stands RoHS compliant with Cadmium contact; (555) stands for RoHS compliant with Cadmium-free contact.

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

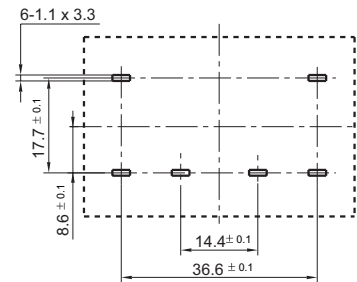
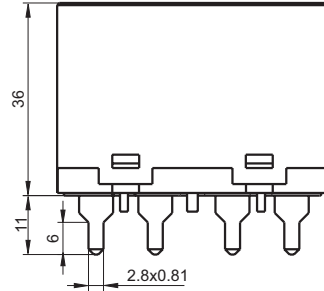
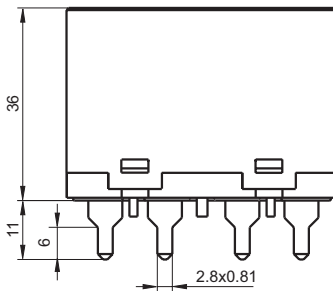
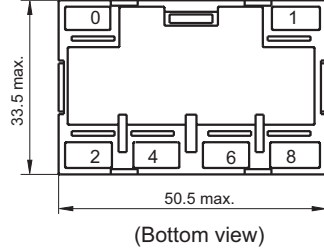
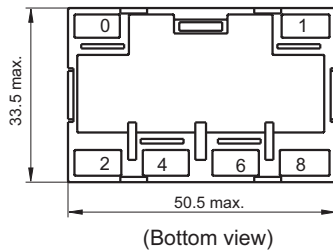
Unit: mm

### Outline Dimensions

### PCB Layout (Bottom view)

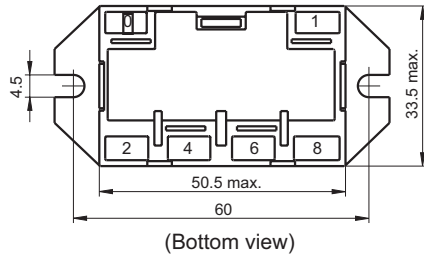
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HF116F-1/□□□□ -□ -P-2H-□

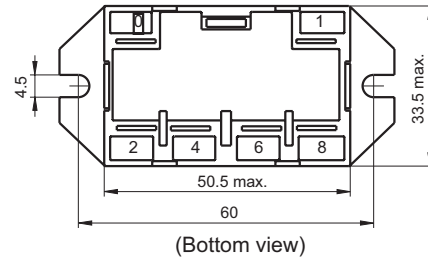


Outline Dimensions

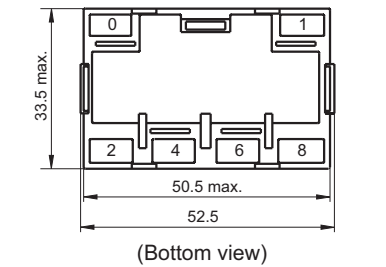
HF116F-1/□□□□-□-F-1H-□



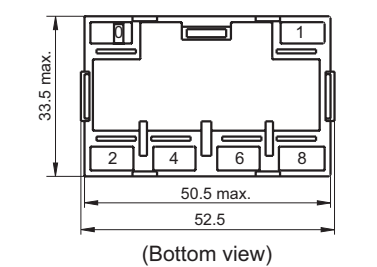
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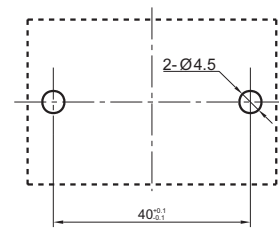
HF116F-1/□□□□-□-A-1H-□



HF116F-1/□□□□-□-A-2H-□

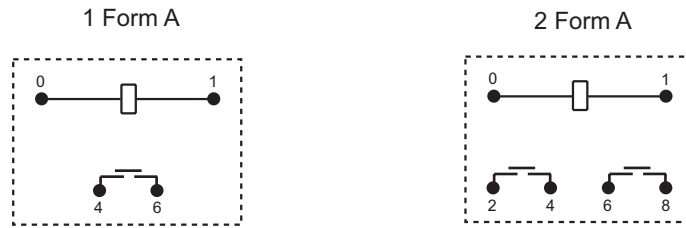


Mounting Holes

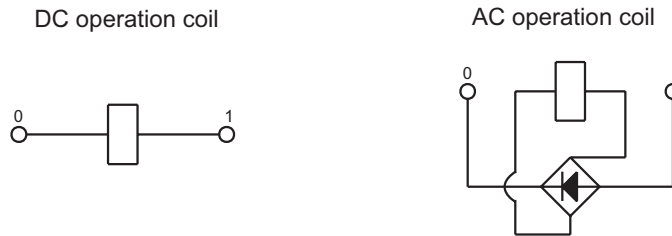


- Remark: 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should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

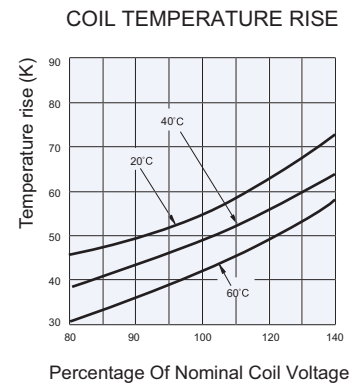
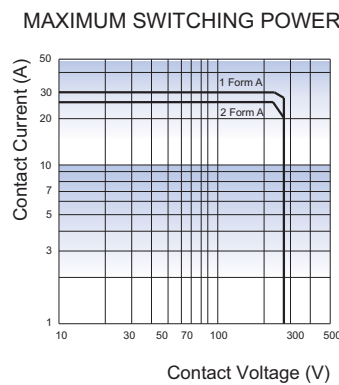
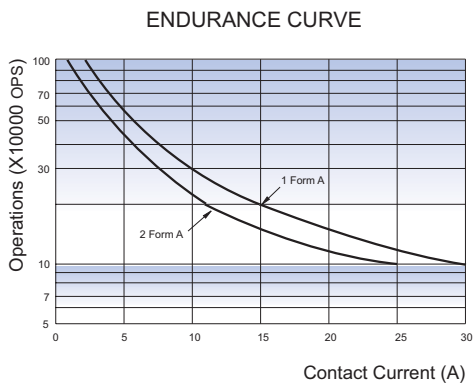
Wiring Diagram  
(Bottom view)



Coil Inner Circuit



CHARACTERISTIC CURVES



Disclaimer

This datasheet is for the customers' reference. All the specifications are 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.