

# HF14FW

# MINIATURE HIGH POWER RELAY



File No.:E134517



File No.:R9659294



File No.:CQC02001001955



## Features

- 20A switching capability
- 4kV dielectric strength (between coil and contacts)
- Sockets available
- Wash tight and flux proofed types available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (29.0 x 13.0 x 26.5) mm

## CONTACT DATA

Contact arrangement	1A, 1B, 1C
Contact resistance	50mΩ (at 1A 24VDC)
Contact material	AgSnO <sub>2</sub> , AgCdO
Contact rating	Resistive: 16A 277VAC/24VDC 1HP 240VAC TV-8 125VAC (NO only)
Max. switching voltage	277VAC / 30VDC
Max. switching current	20A
Max. switching power	5540VAC / 480W
Mechanical endurance	1 x 10 <sup>7</sup> OPS
Electrical endurance	1 x 10 <sup>5</sup> OPS <sup>1)</sup>

## CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between open contacts	1000VAC 1min
Operate time (at nomi. volt.)	15ms max.	
Release time (at nomi. volt.)	5ms max.	
Ambient temperature	-40°C to 85°C	
Humidity	98% RH, 40°C	
Shock resistance	Functional	98m/s <sup>2</sup>
	Destructive	980m/s <sup>2</sup>
Vibration resistance	10Hz to 55Hz 1.5mm DA	
Termination	PCB	
Unit weight	Approx. 18.5g	
Construction	Wash tight, Flux proofed	

- Notes:** 1) If more details about testing method are required, please contact us.  
 2) The data shown above are initial values.  
 3) Please find coil temperature curve in the characteristic curves below.

## COIL

Coil power	Standard: Approx.720mW Sensitive: Approx.530mW
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## COIL DATA

at 23°C

### Standard Type

( 720mW )

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max. Allowable Voltage VDC	Coil Resistance Ω
5	3.6	0.5	5.5	36 x (1±10%)
6	4.3	0.6	6.6	50 x (1±10%)
9	6.5	0.9	9.9	115 x (1±10%)
12	8.6	1.2	13.2	200 x (1±10%)
18	13.0	1.8	19.8	460 x (1±10%)
24	17.3	2.4	26.4	820 x (1±10%)
48	34.6	4.8	52.8	3300 x (1±10%)
60	43.2	6.0	66.0	5100 x (1±10%)



HONGFA RELAY

ISO9001, ISO/TS16949, ISO14001, OHSAS18001, IECQ QC 080000 CERTIFIED

2008 Rev. 1.00

## COIL DATA at 23°C

**Sensitive Type** ( 530mW )

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max. Allowable Voltage VDC	Coil Resistance Ω
5	3.60	0.5	7.0	47 x (1±10%)
6	4.30	0.6	8.4	68 x (1±10%)
9	6.50	0.9	12.6	160 x (1±10%)
12	8.60	1.2	16.8	275 x (1±10%)
18	13.0	1.8	25.2	620 x (1±10%)
24	17.3	2.4	33.6	1100 x (1±10%)
48	34.6	4.8	67.2	4170 x (1±10%)
60	43.2	6.0	84.0	7000 x (1±10%)

**Notes:** 1) When requiring pick-up voltage < 72% of nominal voltage, special order allowed.  
2) Suggesting to use the sensitive type.

## SAFETY APPROVAL RATINGS

<b>UL&amp;CUL</b>	20A 24VDC
	16A 277VAC
	12A 277VAC
	1HP 240VAC
	20A 277VAC (NO only)
	TV-8 125VAC (NO only)
<b>TÜV</b>	16A 250VAC
	16A 30VDC

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

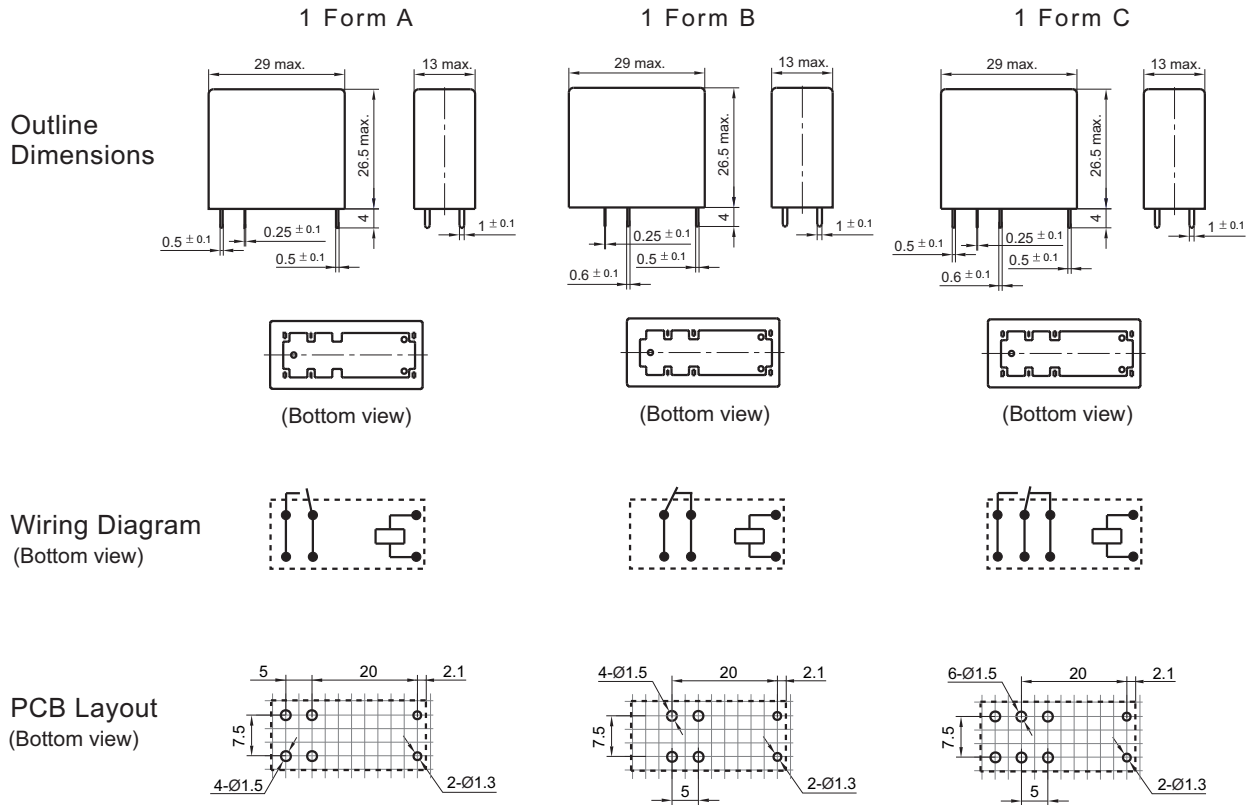
## ORDERING INFORMATION

<b>Type</b>	HF14FW / 012 -H S P T F (XXX)			
<b>Coil voltage</b>	5, 6, 9, 12, 18, 24, 48, 60VDC			
<b>Contact arrangement</b>	H: 1Form A D: 1 Form B Z: 1 Form C			
<b>Construction</b> <sup>1)</sup>	S: Wash tight		Nil: Flux proofed	
<b>Coil power</b>	P: Standard		Nil: Sensitive	
<b>Contact material</b>	T: AgSnO <sub>2</sub>		Nil: AgCdO	
<b>Insulation standard</b>	F: Class F		Nil: Class B	
<b>Customer special code</b>				

**Notes:** 1) Under the ambience with dangerous gas like H<sub>2</sub>S, SO<sub>2</sub> or NO<sub>2</sub>, wash tight type is recommended; please test the relay in real applications.  
If the ambience allows, flux proofed is preferentially recommended.  
2) Standard type is with black cover. Smoke dust cover is available.

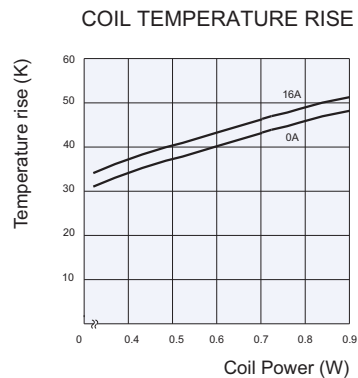
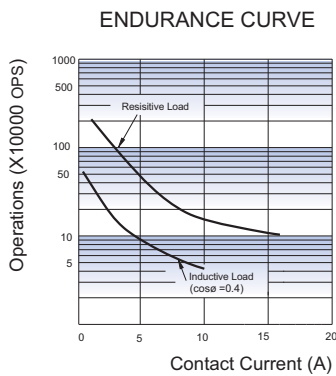
# OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm



- 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  $\pm 0.1\text{mm}$ .  
 3) The width of the gridding is 2.5mm.

## 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.