

# HF115FP

# MINIATURE POWER RELAY



File No.: E133481



File No.: 116934



## Features

- 1 pole 16A, 2 pole 8A , 1 CO & 2 CO contacts
- 5kV dielectric, Creepage distance 8 mm (coil to contacts)
- Meeting VDE 0700, 0631 reinforce insulation
- DC/AC coil type relay , Coil power 400mW / 0.75VA
- Manual test device
- Type with mechanical indicator / electrical indicator
- Sockets available

**RoHS compliant**

## CONTACT DATA

Contact arrangement	1C	2C
Contact resistance <sup>1)</sup>	100mΩ max.(at 1A 6VDC)	
Contact material	AgNi	
Contact rating (Res. load)	16A 250VAC	8A 250VAC
Max. switching voltage	440VAC	
Max. switching current	16A	8A
Max. switching power	4000VA	2000VA
Mechanical endurance	DC type: 5 x 10 <sup>6</sup> OPS AC type: 1 x 10 <sup>6</sup> OPS	
Electrical endurance	1Z3B type: 3 x 10 <sup>4</sup> OPS (16A 250VAC, Resistive load, at 70°C, 1s on 9s off) 2Z4B type: 5 x 10 <sup>4</sup> OPS (8A 250VAC, Resistive load, at 70°C, 1s on 9s off)	

Notes: 1) The data shown above are initial values.

## CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	5000VAC 1min
	Between open contacts	1000VAC 1min
	Between contact sets	2500VAC 1min
Operate time (at nomi. volt.)	DC type: 15ms max.	
Release time (at nomi. volt.)	DC type: 8ms max.	
Temperature rise (at nomi. volt.)	DC type: 60K max. AC type: 85K max.	
Shock resistance *	Functiona	98m/s <sup>2</sup>
	Destructive	980m/s <sup>2</sup>
Vibration resistance*	NO	10Hz to 150Hz 10g
	NC	length direction: 10Hz to 150Hz 2g other direction: 10Hz to 150Hz 5g
Humidity	5% to 85% RH	
Ambient temperature	-40°C to 70°C	
Termination	PCB	
Unit weight	Approx. 16g	
Mounting distance	5mm, packing of sockets	

Notes: 1) The data shown above are initial values.  
2) \* Index is not that of relay length direction.  
3) UL insulation system: Class A

## COIL

Coil power	DC type: Approx. 400mW; AC type: Approx. 0.75VA
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Notes: The data shown above don't include the power of electronic indicating circuit when the relay picks-up.

## COIL DATA

at 23°C

### DC type

Nominal Voltage VDC	Pick-up Voltage VDC max. <sup>1)</sup>	Drop-out Voltage VDC min. <sup>1)</sup>	Max. Voltage VDC <sup>2)</sup>	Coil Resistance Ω
12	8.4	1.2	18	360 x (1±10%)
24	16.8	2.4	36	1440 x (1±10%)
48 <sup>3)</sup>	33.6	4.8	72	5760 x (1±15%)
110 <sup>3)</sup>	77.0	11.0	165	25200 x (1±15%)

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.  
3) For products with rated voltage ≥ 48V, measures should be taken to prevent coil overvoltage in order to protect coil in test and application (eg. Connect diodes in parallel).

### AC type(50Hz)

Nominal Voltage VAC	Pick-up Voltage VAC max. <sup>1)</sup>	Drop-out Voltage VAC min. <sup>1)</sup>	Coil Current mA	Coil DC Resistance Ω
24	18.0	3.6	31.6	350 x (1±10%)
115	86.3	17.25	6.6	8100 x (1±15%)
230	172.5	34.5	3.2	32500 x (1±15%)

Notes:1) The data shown above are initial values.

## SAFETY APPROVAL RATINGS

UL/CUL	1 Form C	16A 250VAC at 70°C
	2 Form C	8A 250VAC at 70°C
VDE	1 Form C	16A 250VAC at 70°C
	2 Form C	8A 250VAC at 70°C

Notes: 1) All values unspecified are at room temperature.  
2) Only typical loads are listed above. Other load specifications can be available upon request.



HONGFA RELAY

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

2018 Rev. 1.01

## ORDERING INFORMATION

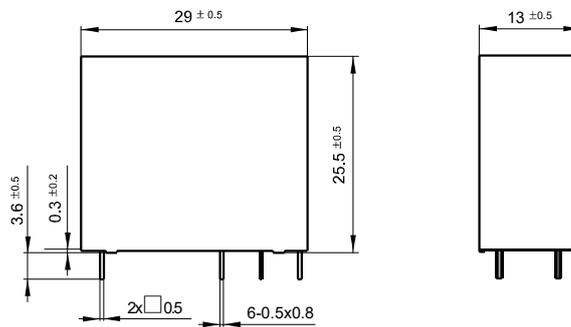
Type	HF115FP /	024	-1Z	3	B	(XXX)
Coil voltage	012 to 110: 12, 24, 48, 110 VDC A24 to A230: 24, 115, 230 VAC					
Contact arrangement	1Z: 1 Form C		2Z: 2 Form C			
Version	3: 5.0mm 1 pole 16A		4: 5.0mm 2 pole 8A			
Contact material	B: AgNi					
Special code <sup>2)</sup>	XXX: Customer special requirement		Nil: Standard			

Notes: 1) Flux-proofed relays can not be used in the environment with pollutants like H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>, dust, etc.  
2) The customer special requirement express as special code after evaluating by Hongfa.

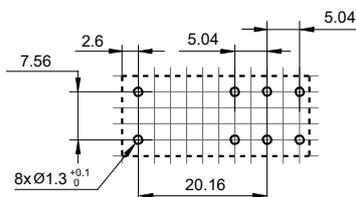
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

### Outline Dimensions



PCB Layout (Bottom view)



DIN rail Socket



Solder Socket



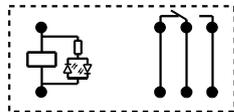
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1$ mm, tolerance should be  $\pm 0.2$ mm; outline dimension  $> 1$ mm and  $\leq 5$ mm, tolerance should be  $\pm 0.3$ mm; outline dimension  $> 5$ mm, tolerance should be  $\pm 0.4$ mm.  
2) The tolerance without indicating for PCB layout is always  $\pm 0.1$ mm.  
3) The width of the gridding is 2.52mm.

# OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

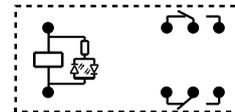
Unit: mm

## Wiring Diagram (Bottom view)

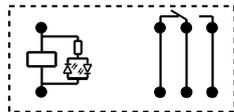
HF115FP/□□□-1Z3□



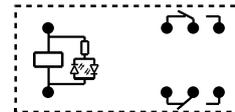
HF115FP/□□□-2Z4□



HF115FP/A□□□-1Z3□



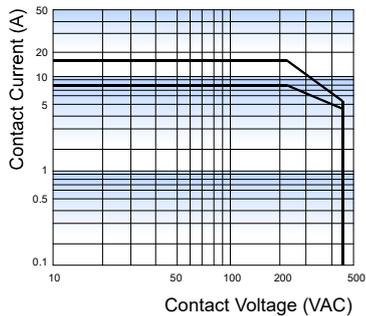
HF115FP/A□□□-2Z4□



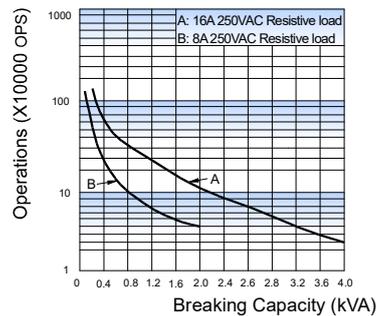
Remark: DC coil with a parallel diode is available but the coil terminal is different in positive or cathode.

## CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER



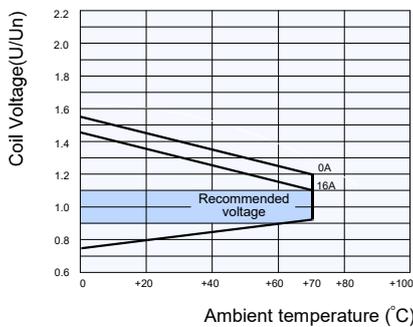
ENDURANCE CURVE



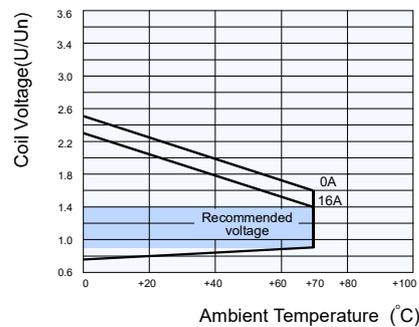
**Notes:**

- Curve A: 1Z3B type  
Curve B: 2Z4B type
- Test conditions:  
NO, Flux proofed, Room temp., 1s on 9s off

COIL OPERATING RANGE (AC) \*

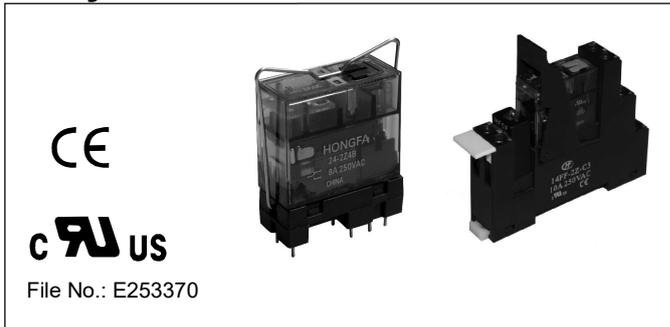


COIL OPERATING RANGE (DC) \*



**Notes:** \* The use of a relay with an energising voltage other than the rated coil voltage may lead to reduced electrical life. An energising voltage over the above range may damage the insulation of relay coil.

# Relay Sockets



## Features

- The insulation resistance is 1000MΩ
- Three mounting types are available: PCB, screw mounting and DIN rail mounting
- With finger protection device
- Many kinds of plug-in modules are available with the function of energizing indication and wiring protection
- Environmental friendly product (RoHS compliant)

## CHARACTERISTICS

Type	Nominal Voltage	Nominal Current	Ambient Temperature	Dielectric Strengths	Screw Torque	Wire Strip Length
14FF-2Z-A1	250VAC	10A	-40 °C to 70 °C	5000VAC	—	—
14FF-2Z-C3	250VAC	10A	-40 °C to 70 °C	5000VAC	0.6N · m	7mm
14FF-2Z-C4	250VAC	10A	-40 °C to 70 °C	5000VAC	—	9mm

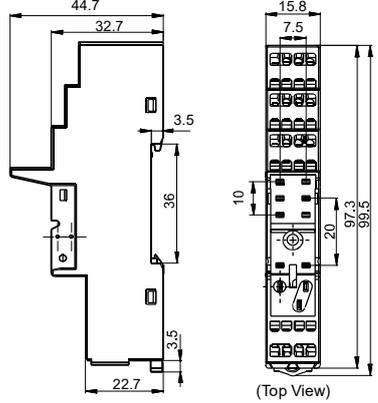
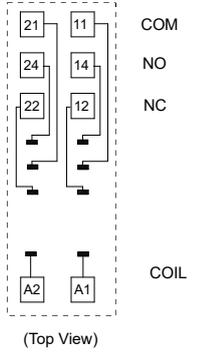
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Socket	Outline Dimensions	Wiring Diagram / PCB Layout	Components Available
<p>14FF-2Z-A1</p> <p>PCB terminal, PCB or Screw mounting</p>	<p>(Top View)</p>	<p>(Top View)</p>	<p>metallic retainer 14FF-H3</p> <p>remarks:the dielectric strength can reach 1500VAC that sockets mounted 14FF-H3</p>
<p>14FF-2Z-C3</p> <p>Screw Terminal, DIN rail or Screw mounting, With finger protection device Applicable for HF115F/XXX-1XX3XXX HF115F/XXX-1XX4XXX When it is HF115F/XXX-1XX3XXX, "21"- "11", "24"- "14", "22"- "12" of socket must connect in parallel.</p>	<p>(Top View)</p>	<p>(Top View)</p>	<p>plastic retainer 14FF-H6</p> <p>marker 14FF-M1</p> <p>plug-in module HFAA to HFHU*</p>

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Socket	Outline Dimensions	Wiring Diagram / PCB Layout	Components Available
<p>14FF-2Z-C4</p>  <p>Spring-loaded terminal DIN rail mounting With finger protection device Applicable for HF115F/ XXX-1XX3XXX HF115F/ XXX-1XX4XXX When it is HF115F/XXX-1XX3XXX, "21"-"11", "24"-"14", "22"-"12" of socket must connect in parallel.</p>	 <p>(Top View)</p>	 <p>(Top View)</p>	<p>plastic retainer 14FF-H6</p> <p>marker 14FF-M1</p> <p>plug-in module HFAA to HFHU*</p>

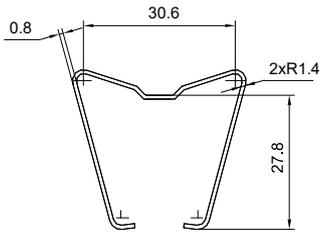
Notes: \* Please refer to the product datasheet if plug-in module is required.

## DIMENSION OF RELATED COMPONENT (AVAILABLE)

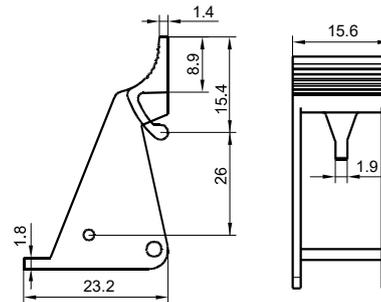
Unit: mm

### Retainer

14FF-H3 (Metallic retainer)

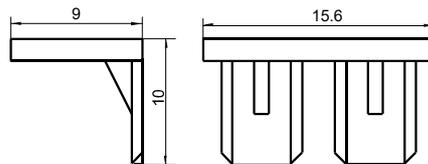


14FF-H6 (Plastic retainer)



### Marker

14FF-M1



### Things to be noticed when selecting sockets:

1. Please choose suitable relay socket according to the actual mounting environment, relay contact poles and terminal layout. If there is any query on selection, please contact Hongfa for the technical service.
2. Socket which can be mounted with markers is furnished with a marker; as for other related components, they should be selected separately. Please do give clear indication of the types of relay sockets and related components you choose while placing order.
3. The above is only an example of typical socket and related component type which is suitable to HF115FP relay. If you have any special requirements, please contact us.
4. Main outline dimension, outline dimension > 50mm, tolerance should be  $\pm 1\text{mm}$ ; 20mm < outline dimension  $\leq 50\text{mm}$ , tolerance should be  $\pm 0.5\text{mm}$ ; 5mm < outline dimension  $\leq 20\text{mm}$ , tolerance should be  $\pm 0.4\text{mm}$ ; outline dimension  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ .
5. DIN rail mounting: recommend to use standard rail  $35 \times 7.5 \times 1\text{mm}$ ,  $35 \times 15 \times 1\text{mm}$ .

### 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.

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