

# HF115F-LS

# MINIATURE HIGH POWER LATCHING RELAY



File No.:E134517



File No.:116934



File No.:CQC14002104529

CQC17002176310



## Features

- Latching relay
- Special contact struction
- Incandescent lamp load: 3500W 277VAC
- 5kV dielectric strength (between coil and contacts)
- Creepage distance: 11mm
- Low height: 15.7 mm
- Meeting reinforce insulation
- Product in accordance to EN60669-1 available
- Product in accordance to IEC 60335-1 available
- Plastic sealed and flux proofed types available
- UL insulation system: Class F
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (29.0 x 12.7 x 15.7) mm

## CONTACT DATA

Contact arrangement	1A
Contact resistance	100mΩ max.(at 1A 6VDC)
Contact material	W+AgSnO <sub>2</sub>
Contact rating	Resistive:16A 250VAC
	Incandescent Lamp: 3500W 277VAC
	Inrush current: 165A / 20ms
	LED(Electronic ballast): 492A/1.5ms
Max. switching voltage	440VAC
Max. switching current	16A
Max. switching power	4000VA
Mechanical endurance	2 x 10 <sup>6</sup> OPS
Electrical endurance	1.2 x 10 <sup>4</sup> ops (3500W 277VAC, Tungsten lamp, at 40°C, 1s on 59s off) 6 x 10 <sup>3</sup> ops(16A 250VAC, Resistive load, at 85°C, 5s on 5s off)

## CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	5000VAC 1min
	Between open contacts	1250VAC 1min
Surge voltage (between coil & contacts)	10kV (1.2 / 50μs)	
Set time (at nomi. volt.)	10ms max.	
Reset time (at nomi. volt.)	10ms max.	
Temperature rise (at nomi. volt.)	55K max.	
Shock resistance *	Functional	98m/s <sup>2</sup>
	Destructive	980m/s <sup>2</sup>
Vibration resistance *	10Hz to 150Hz	10g
Humidity	5% to 85% RH	
Ambient temperature	-40°C to 85°C	
Termination	PCB	
Unit weight	Approx. 13.5g	
Construction	Plastic sealed, Flux proofed	

**Notes:**1) This contact resistance value is tested under the normal voltage.

- \* Index is not that of relay length direction.
- The data shown above are initial values.
- UL insulation system: Class F.

## COIL

Coil power	1 coil latching: Approx. 400mW 2 coils latching: Approx. 600mW
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## COIL DATA

at 23°C

### 1 coil latching

Nominal Voltage VDC	Set Voltage VDC max.	Pulse Width (ms)		Reset Voltage VDC max.	Max. Voltage VDC	Coil Resistance Ω
		Typical	Min.			
5	3.5	≥50	30	3.5	6	62x (1±10%)
6	4.2	≥50	30	4.2	7.2	90x (1±10%)
9	6.3	≥50	30	6.3	10.8	202x (1±10%)
12	8.4	≥50	30	8.4	14.4	360x (1±10%)
24	16.8	≥50	30	16.8	28.8	1440x (1±10%)

### 2 coils latching

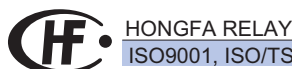
Nominal Voltage VDC	Set Voltage VDC max.	Pulse Width (ms)		Reset Voltage VDC max.	Max. Voltage VDC	Coil Resistance x (1±10%)Ω
		Typical	Min.			
5	3.5	≥50	30	3.5	7.5	42x (1±10%)
6	4.2	≥50	30	4.2	9	55x (1±10%)
9	6.3	≥50	30	6.3	13.5	135x (1±10%)
12	8.4	≥50	30	8.4	18	240x (1±10%)
24	16.8	≥50	30	16.8	36	886x (1±10%)

## SAFETY APPROVAL RATINGS

UL/CUL	16A 250VAC General use at 85°C Standard ballast 5A 277VAC at 40°C Electronic ballast 16A 120VAC at 40°C Electronic ballast 16A 277VAC at 40°C 3500W 277VAC Tungsten Lamp at 40°C TV-15 120VAC 40°C Tungsten 15A 120VAC 40°C
	16A 250VAC Resistive at 85°C EN60669: 16A 250VAC COSØ =0.6 16A 250VAC 140μF

**Notes:** 1) All values unspecified are at room temperature.

- Only typical loads are listed above. Other load specifications can be available upon request.



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

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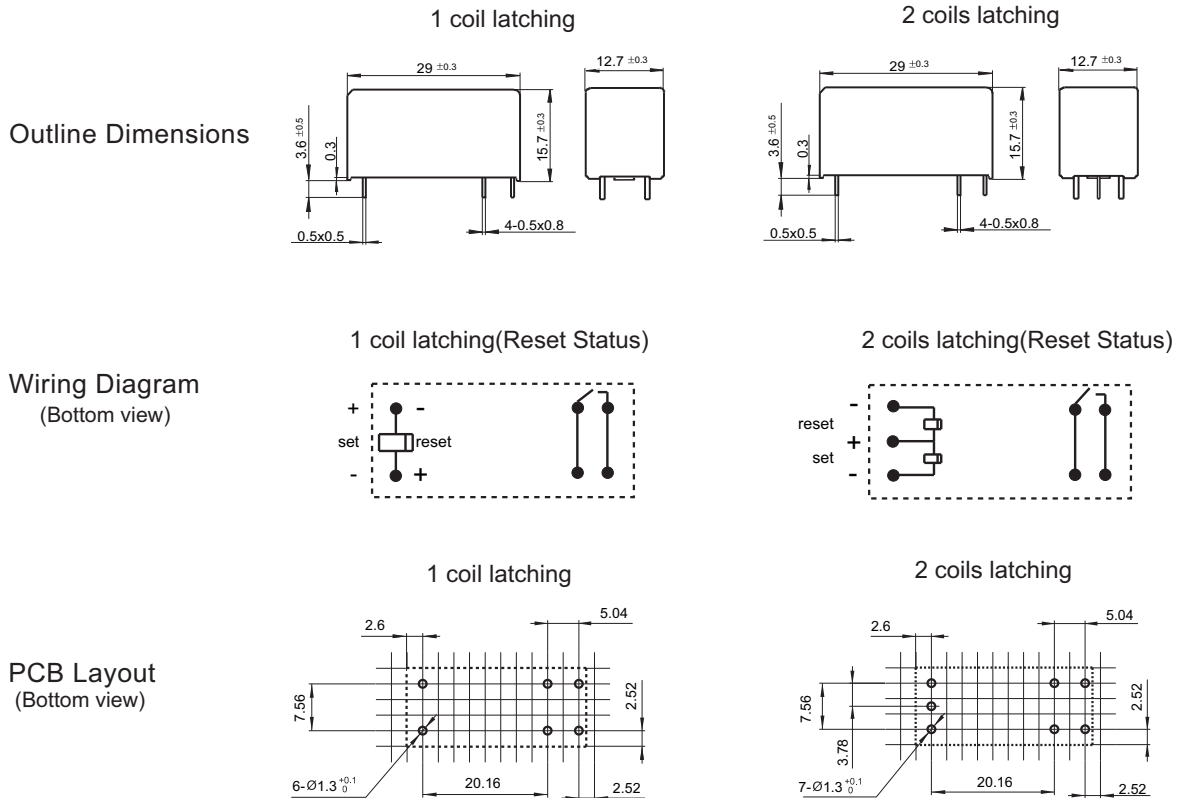
## ORDERING INFORMATION

Type	HF115F-LS / 12 -H S L1 F (XXX)						
Coil voltage	5, 6, 9, 12, 24VDC						
Contact arrangement	H: 1 Form A						
Construction <sup>1)2)</sup>	S: Plastic sealed		Nil: Flux proofed				
Sort	L1: 1 coil latching		L2: 2 coils latching				
Insulation Standard	F: Class F						
Special code <sup>3)</sup>	XXX: Customer special requirement			Nil: Standard			

- Notes:** 1) We recommend flux proofed types for a clean environment (free from contaminations like H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>, dust, etc.). We suggest to choose plastic sealed types and validate it in real application for an unclean environment (with contaminations like H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>, 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) The customer special requirement express as special code after evaluating by Hongfa. e.g. (335) stands for product in accordance to IEC 60335-1 (GWT).

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm



- Remark:** 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1$ 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.

### Notice

1. Relay is on the "reset" status when being released from stock, with the consideration of shock risen from transit and relay mounting, relay would be changed to "set" status, therefore, when application ( connecting the power supply), please reset the relay to "set" or "reset" status on request.
2. In order to maintain "set" or "reset" status, energized voltage to coil should reach the rated voltage. Do not energize voltage to "set" coil and "reset" coil simultaneously. And also long energized time (more than 1 min) should be avoided.
3. Keep the product away from strong magnetic field during transportation, storage and application, to avoid change of set/reset voltage.

### 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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