

# HFE10-L

## MINIATURE HIGH POWER LATCHING RELAY



File No.:E134517



File No.:40035869



### Features

- 20A switching capacity
- Short circuit current capacity of 5000A for 2ms
- Lamp load requirement in IEC 60669-2-1 compliant
- Inrush current capacity up to 500A for 2ms
- Max. inrush current 800A

RoHS compliant

### CONTACT DATA

Contact arrangement	1A, 1B
Contact resistance <sup>1)</sup>	1.5mΩ max.(at 1A 6VDC)
Contact material	AgSnO <sub>2</sub>
Contact rating <sup>2)</sup>	277VAC 20A, 1 x 10 <sup>6</sup> OPS (Resistive) 30VDC 20A, 1 x 10 <sup>6</sup> OPS (Resistive) 250VAC 60A, 3 x 10 <sup>4</sup> OPS ( General purpose ) 250VAC 5000W, 3 x 10 <sup>4</sup> OPS (Incandescent lamp) 277VAC 20A, 3 x 10 <sup>4</sup> OPS (Standard ballast) 277VAC 16A, 3 x 10 <sup>4</sup> OPS (Electronic ballast)
Max. switching voltage	440VAC
Max. switching current	60A
Max. switching power	15000VA
Max. continuous current	40A
Mechanical endurance	1 x 10 <sup>6</sup> OPS
Electrical endurance	See "contact rating"

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

2) Conform to EN60947-4-1(VDE0660-102),EN60669-1(VDE0632-1), EN60669-2-1, (VDE0632-1) lamp load request.

### SAFETY APPROVAL RATINGS

UL/CUL	1A,1B	General purpose: 250VAC,60A Standard ballast: 277VAC,20A Electronic ballast: 277VAC,16A Incandescent lamp: 250VAC,5000W
VDE	1A,1B	Resistive load: 277VAC 20A Fluorescent lamp ( uncompensated): 250VAC 20A Fluorescent lamp (parallel compensated): 250VAC 20A Incandescent lamp:250VAC,5000W AC-1 AC-3

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

2) Only some typical ratings are listed above. If more details are required, please contact us.

### COIL

Rated power	Single coil latching: Approx. 1.5W Double coils latching: Approx. 3.0W
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### CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between open contacts	1500VAC 1min
Creepage distance (input to output)		1A,1B:12mm
Set time (at nomi. volt.)		15ms max.
Reset time (at nomi. volt.)		15ms max.
Max. operate frequency		20cycles/min
Shock resistance	Functional	98m/s <sup>2</sup>
	Destructive	980m/s <sup>2</sup>
Vibration resistance		10Hz to 55Hz 1.5mm DA
Humidity		5% to 85% RH
Ambient temperature		-40°C to 85°C
Termination		PCB
Unit weight		Approx. 32g
Construction		Plastic sealed

Notes: The data shown above are initial values.



HONGFA RELAY

ISO9001、IATF16949、ISO14001、OHSAS18001、IECQ QC 080000 CERTIFIED

2021 Rev. 1.00

## COIL DATA

at 23°C

Nominal Voltage VDC	Set / Reset Voltage VDC max. 1)2)	Pulse Duration ms min.	Coil Resistance x (1±10%) Ω	
6	4.8	50	Single coil latching	22
9	7.2	50		54
12	9.6	50		100
15	12	50		150
24	19.2	50		360
48	38.4	50		1600
6	4.8	50	Double coils latching	11+11
9	7.2	50		27+27
12	9.6	50		50 +50
15	12	50		75 + 75
24	19.2	50		180 +180
48	38.4	50		800 +800

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

2) The above set voltage, reset voltage are the test value for relay without load. Please use 1~1.5 times of rated voltage to drive the relay for your application.

## ORDERING INFORMATION

Type	HFE10	-L/	12	-D	T	-L2	-R	(XXX)
Version	L: Products series code							
Coil voltage	6, 9, 12, 15, 24, 48VDC							
Contact arrangement	1) D: 1 Form B    H: 1 Form A							
Contact material	T: AgSnO <sub>2</sub>							
Coil type	L1: Single coil latching      L2: Double coils latching							
Polarity	R: Reverse polarity      Nil: Standard polarity							
Special code <sup>2)</sup>	XXX: Customer special requirement							

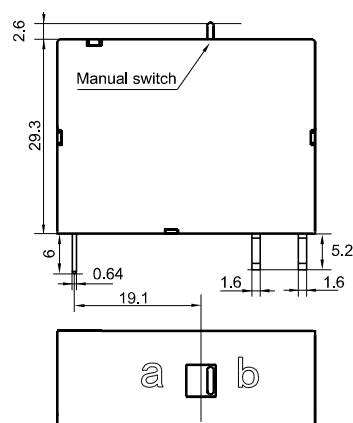
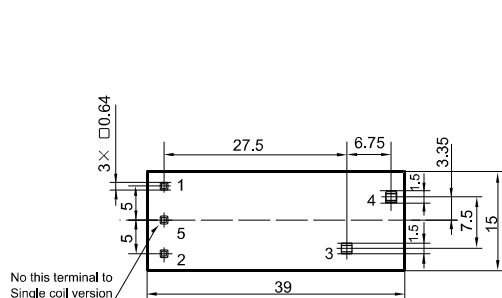
Notes: 1) H means that relay is on the "reset" status when delivery; D means that relay is on the "set" status when delivery. If no special required by customer, we will keep the relay on the "set" status when delivery.

2) The customer special requirement express as special code after evaluating by Hongfa.

## OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit: mm

### Outline Dimensions



## OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit: mm

Remark: 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  $\pm 0.4\text{mm}$ .

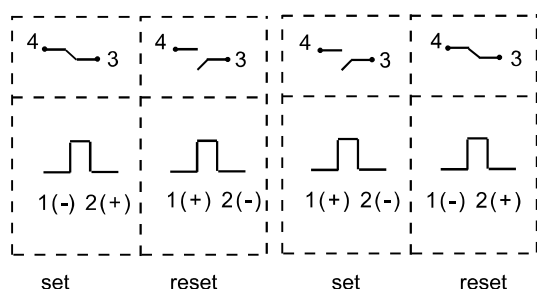
### Wiring Diagram

1 Form A

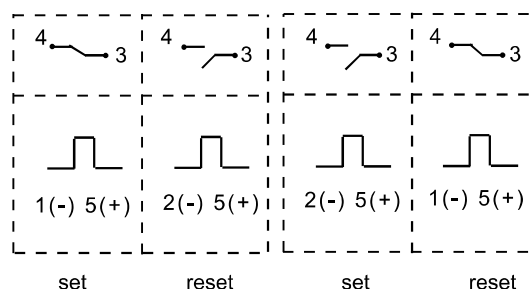
Contact position		
Manual switch position	( a )	( b )

#### Standard polarity

Single coil latching, 1 Form A Single coil latching, 1 Form B

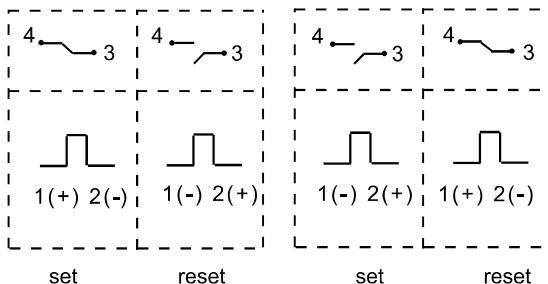


Double coils latching, 1 Form A Double coils latching, 1 Form B

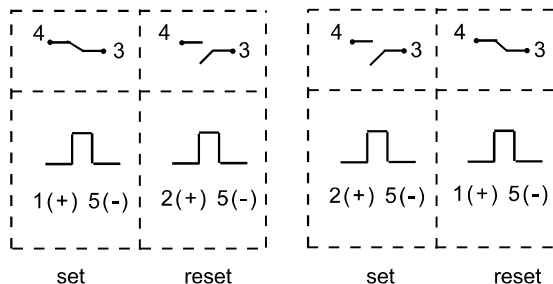


#### Negative polarity

Single coil latching, 1 Form A Single coil latching, 1 Form B



Double coils latching, 1 Form A Double coils latching, 1 Form B



#### Notice:

1. The recommended soldering temperature range is  $250 \pm 10^\circ\text{C}$  with the duration of 2~5s. It is not suggested to apply reflow soldering method, if it is required indeed, please contact with our technicians. It is general required that the wave soldering temperature at  $250^\circ\text{C}$  shall not more than 2s.
2. Relay is on the "reset" or "set" status when delivery, with the consideration of shock risen from transit and relay mounting, relay would be changed to "set" or "reset" status, therefore, when application (connecting the power supply), please reset the relay to "set" or "reset" status on request.
3. In order to maintain "set" or "reset" status, energized voltage applied across to the coil should reach the rated voltage, impulse width should be 5 times more than "set" or "reset" time. Do not energize voltage to "set" coil and "reset" coil simultaneously. And also long energized time (more than 1 min) should be avoided.
4. Because of the dust proof structure, the recommended storage time shall not longer than 6 months, Please pay attention to the storage environment. To ensure contact reliability, we will keep contact status be closed when delivery if no special required by customer.

#### Disclaimer

The specification is for reference only. 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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